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who is IT?

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NEWSPAPER

Computerworld is IT
(but you already knew that)

DG .net

Looks aren't everything

Intranets don't need to be pretty – just smart. **Follows page 33**

Skip the Web fluff

What do serious users want? We probe consumer and business-to-business purchasing sites. **43, 68**

COMPUTERWORLD

The World's Technology Newspaper
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October 26, 1998 • Vol. 32 • No. 43 • $4/Copy

Users say Y2K law is vendor loophole

FRAUD TOUGH TO PROVE; CONTINGENCY PLANS ADVISED

By Thomas Hoffman

DON'T BE FOOLED by the cuddly overtones of the so-called Good Samaritan Act that President Clinton signed into law last week, said users and lawyers who have combed through its language. The new law, they said, is a clever subterfuge by U.S. vendors to shrink-wrap themselves in immunity against year 2000 lawsuits.

"I think this [act] is superbly written for an insidious purpose — it's an escape hatch for systems developers," said Richard D. Williams, a partner at Charlston, Revich & Williams LLP, a

Y2K law, page 90

BRAD SMITH

Eli Lilly & Co.'s Mike Skiles: "If you don't have a good feel for what vendors are doing [for Y2K], go right into contingency planning"

By Sharon Gaudin ☞A major Midwestern **retail chain** spent 18 months and roughly $3 million to replace its old E-mail system on **16,000 desktops**. And users hated it. So much, in fact, the company's information technology team had to **rip it out** and buy faster hardware to give users a system as

Migration plans, page 24

SCOTT MATTHEWS

New Age IT must manage outside help

By Julia King

BUILDING AND RUNNING the computer systems on which companies run is a tough job, and somebody has to do it.

But not necessarily IT. Increasingly, it's an outside service company that IT must find, hire, manage, pay and keep honest — all of which requires radically different skills than those held by today's information technology professionals.

Last year, U.S. companies spent more than $140 billion on IT services, contracting out everything from installing PCs and software to developing new Internet-based commerce applications.

And they plan to keep on spending — as much as $350 billion by 2002, with the

Outside help, page 10

DIANE FENSTER

IT budgets dodge global downturn

▸ *But 'nice-to-have' projects, consultants face cuts*

By Robert L. Scheier

FROM MILAN, ITALY, to Midland, Mich., IT departments are starting to feel the pain of the worst worldwide economic crisis since World War II.

As nervous business managers trim overall corporate head counts and capital spending, IT executives are falling under increasing pressure to squeeze more out of existing systems such as data networks; to build better, tighter business cases for new projects; and to protect areas such as training

IT budgets, page 16

ANTITRUST TRIAL

E-mail drama drives attack on Microsoft

By Kim S. Nash and Patrick Thibodeau
WASHINGTON

FIERY CROSS-EXAMINATIONS and surprise E-mail evidence highlighted a dramatic courtroom show here last week as the government opened its antitrust case against Microsoft Corp.

The U.S. Department of Justice and 20 states came out shooting, immediately calling a star witness — Netscape Communications Corp. CEO Jim Barksdale — and portraying

E-mail drama, page 91

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RETAILERS STALK SUPPLIERS
Will their partners be ready for the year 2000? Page 4

Wal-Mart fights defections
Suit against Amazon.com, others faces uphill battle. Page 6

BANK-CERTIFIED
Joint venture to authenticate Internet trades. Page 8

NEWSPAPER

Q

How do you help an IT manager wiggle
out of a ridiculously tight budget?

The Armada 3500. Designed to travel light, it gives mobile executives all the computing power they need at a mere 4.4 lbs.

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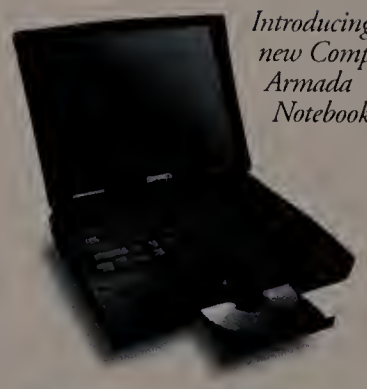

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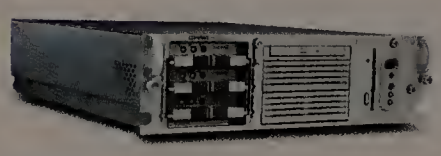

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- Compaq PremierSound
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- Microsoft Windows 95 pre-installed
- 3-year limited warranty[3]

$2,009[1]

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- 24X Max CD-ROM[4]
- ATI RAGE PRO TURBO 2X AGP
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- 3-year limited warranty[3]

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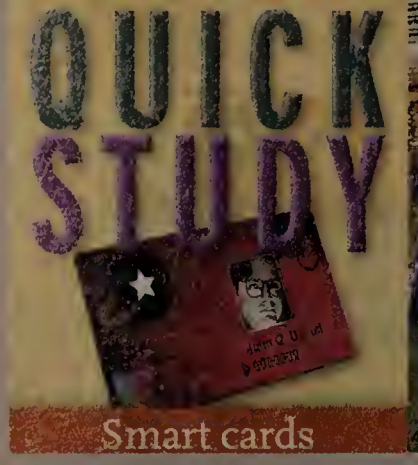

Smart cards have a long way to go before they gain wide acceptance. **QuickStudy, page 29**

How do you get to Wrigley Field? Make users love an IT group they used to despise. **Corporate Strategies, page 39**

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YEAR 2000

Users decry the Good Samaritan Act, which may help vendors escape Y2K responsibility. **1**

Retailers begin year 2000 contingency planning, assuming some suppliers won't be prepared. **4**

Overseas year 2000 requirements differ from those of the SEC, but all apply to multinationals. **55**

SEC levies its first penalties on companies that didn't fess up to Y2K problems. **90**

EXECUTIVE Briefing

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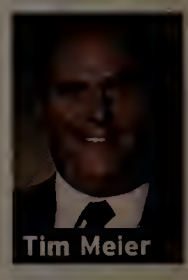


■Tim Meier took the top tech job at PacifiCorp and fought to stop a major outsourcing deal that didn't make sense to him. Then, to reverse the brain-drain caused by the pending deal, he hired talent from his previous employer, U.S. Bancorp, whose people were demoralized by a merger. He brought order to project management, but his disciplined approach rankled some. His systems support a push to bolster service, trading and risk management to help the struggling company turn around. Page 67

■IT groups are starting to get hit by the international economic downturn. The need to solve euro and Y2K problems may prevent IT layoffs, but almost half have seen revenue drop. Some will cut budgets, others will push noncritical projects to a back burner. Paybacks must be in revenue increases, not just cost savings. The positive side is that budget-cutters still see IT as a strategic resource. Pages 1, 16, 17

■Wal-Mart is suing Amazon.com and others, claiming that they raided Wal-Mart IT staffers, who took intellectual property with them. Lawyers say it's hard to win such a case, but other organizations are keeping defections down with noncompete agreements, promises from consultants not to recruit from clients and other upfront agreements. Page 6

■*Chicago Tribune* staffers considered their IT people self-absorbed, mainframe-oriented cellar dwellers, so they paid consultants to handle projects, even though they still had to fund IT. After a change of IT management and two years of restructuring, users stand in line to work with the department, which celebrated with a day at Wrigley Field (see photo, above left). Page 39

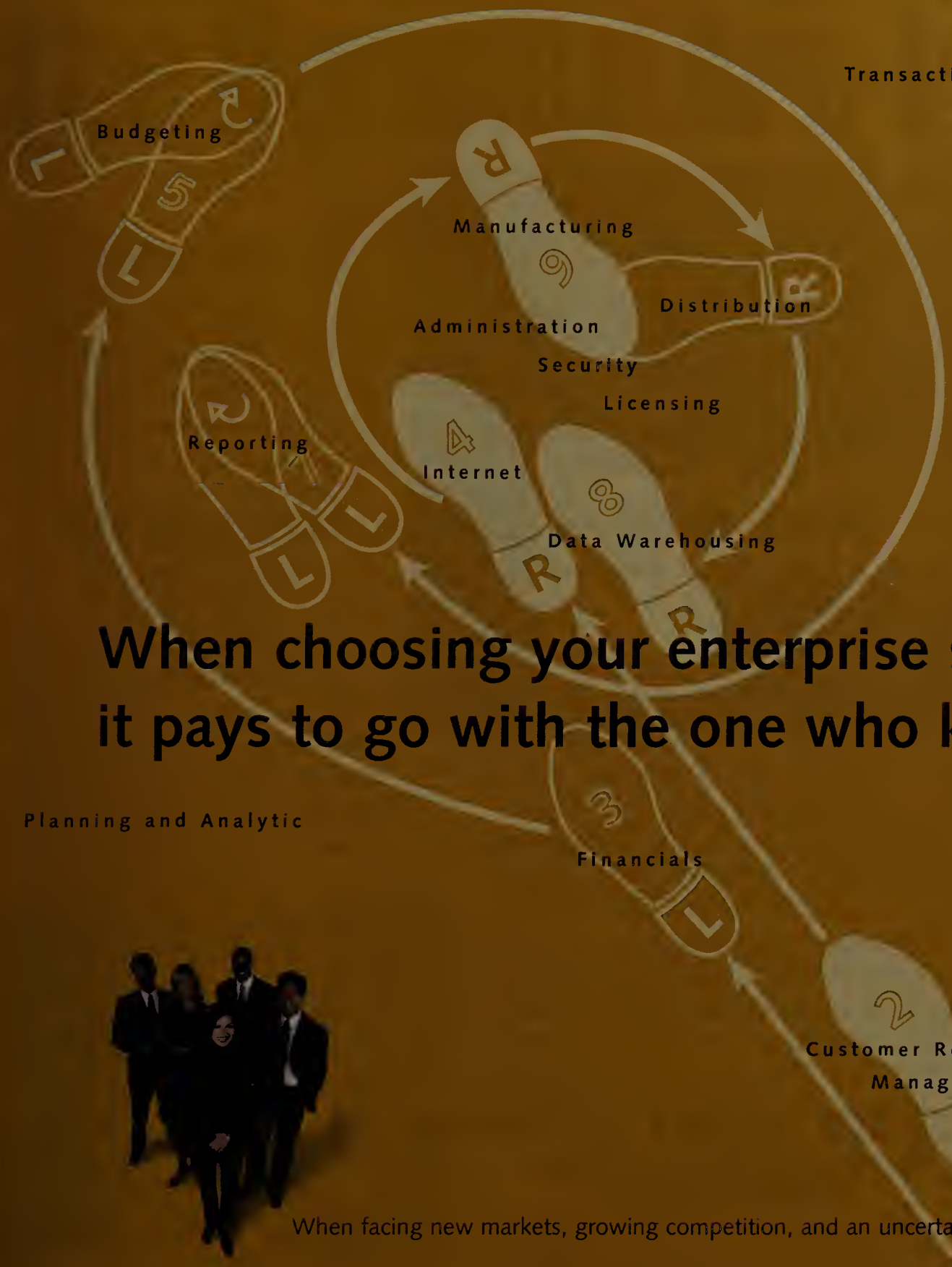
■Business-to-business E-commerce is exploding, but sites need to be as easy to use as those aimed at consumers. Slow and incomplete sites put off even loyal customers, and vendors must be able to link to systems that limit the people within a customer's organization who are authorized to buy. Customers want easy access, speed, customization, privacy and the ability to call a human for help. Page 43

■Camelot Music tried punchcards and outsourcing, but it took a data warehouse/data mart combination to figure out that the largest group of year-end rap and heavy metal buyers were grandparents. Now Camelot gives customers discounts while culling their preferences to figure which marketing programs work. Page 39

■Web site redesigns that focus on the fanciest new technology are less successful than those that concentrate on making information easy to find and features simple to use. Personalizing the site for customers and tying it to back-end processes are key developments. Page 43

Some San Francisco residents are paying water and other city bills electronically.

We're Up to the Future.



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Retailers take steps to get suppliers Y2K-ready

By David Orenstein
DENVER

YEAR 2000 czars at several major retailers are nearly done fixing their in-house systems, but now they're trying to account for the readiness of vendors, suppliers, utilities and local governments. Because they know there will be problems, they have also begun contingency planning.

Retail businesses are more vulnerable than the utilities and governments they depend on, said Cathy Hotka, vice president of information technology at the National Retailing Federation Inc. (NRF), an industry association in Washington.

Those entities are monopolies, she said, but if a supermarket can't open its doors on Jan. 1, 2000, consumers will buy their goods at another store that is open.

"It's the things outside our control that worry me the most," said Morton Mease, director of planning and technology services at Chicago-based Montgomery Ward & Co. He spoke at the NRF's Retail Information Systems conference here last week.

Mease, who chairs the NRF's Survival 2000 Project, is worried that small, rural power and phone companies won't fix their problems in time, leaving stores dark, cold and vulnerable. "If you don't have electricity, you don't have security," he said.

To protect its department stores, Mease said Montgomery Ward is preparing plans for each store describing what to do if power and communications go out. The company wants to make sure that the stores are staffed in the event of a blackout, but Mease acknowledged that employees might understandably want to stay with their families.

Representatives from several leading retailers at the conference described their efforts to minimize damage from the year 2000 problems of others:

■ The Gap Inc. has ranked the company's suppliers by their importance to the company, said Bruce Watson, the San Francisco clothier's senior director of information administration. The company is auditing and writing quarterly reports on its most crucial suppliers and keeping an eye on alternative sources for the commodity merchandise.

■ The Home Depot Inc., the nation's top home-improvement retailer, is preparing mock electronic data interchange transactions to send to suppliers, said Ron Kerr, senior manager of information services. The tests will give the Atlanta-based hardware chain a sense of which suppliers have not fixed their systems.

■ Sears, Roebuck and Co., the second-largest U.S. retailer, is meeting every two weeks with its major data center vendor to monitor the readiness of its systems, said Lorraine R. Gornick, senior project manager at Sears' Hoffman Estates, Ill., headquarters.

The company got readiness reports of varying quality from 71% of its suppliers when it polled them. "The very key providers we had to sit down face to face with," she said.

■ J. C. Penney Co., the nation's fourth-largest retailer, is updating its 3-year-old plan to deal with natural disasters, said vice president Eldridge A. White Jr. The Plano, Texas, company's business-interruption plan now needs to accommodate the possibility of problems occurring all over the country instead of in one area, he said.

■ Goody's Family Clothing Inc. may move its help desk outside its Knoxville, Tenn., headquarters due to concerns about the readiness of its phone company, Telephone and Data Systems Inc. "The consensus is there are going to be some problems," said Marcia Born, director of systems development.

All these steps taken together would make a strong contingency plan, said Kazim Isfahani, an analyst at Giga Information Group in Stamford, Conn.

"This is the largest part of the problem. If you got the early start, you are now addressing" the readiness of those you depend on, he said. □

MOREONLINE

For resources on retail technology, including organizations, publications, a survey and other resources, visit *Computerworld online*.

www.computerworld.com/more

Users await enterprise Java platform

By Carol Sliwa
SAN JOSE, CALIF.

NOVELL INC. last week sounded the horn for a new server-side enterprise Java platform. IBM chimed in agreement. And the company that can do something about the matter — Java's creator, Sun Microsystems Inc. — insisted that it's working on the definition as fast as it can.

That's a good thing, because several users who attended last week's SIGS Java Conference expressed reluctance to launch major server-side projects until the vendors settle on a standard platform for enterprise Java.

Their failure to act presents a dilemma for many companies thinking about using Enterprise JavaBeans (EJB) to reduce the amount of plumbing code they need to write to make their applications work in a distributed environment.

"If we go [to EJB], we want to know they have long-term support and commitment," said Lance Summers, a senior software engineer at Lockheed Martin Corp. Tactical Defense Systems in Goodyear, Ariz., where plans call for mainframe-based number-crunching applications to be transferred from Fortran to Java. "We can't be changing every couple of years. What if we go to EJB and they die in a year?"

"There have been times where we got stuck," said John Place, another senior software engineer at Lockheed Martin. "If a product is not there to support us clear to the end of the project, that makes us suffer, and we go over contract, and cost overruns happen."

Sun released the EJB specification earlier this year without the reference implementation that vendors use to make it work well on their platforms and without the compatibility test suites that vendors use to ensure their products work properly.

"With Enterprise JavaBeans, everybody was so eager to get [it] out, we never figured out a way to do a reference implementation," said Jim Mitchell, technology and architecture vice president at Sun's JavaSoft division, acknowledging the interoperability concerns.

For users, that means that if they write to the nascent EJB specification, they have no assurances their code will run with all the application servers that now claim to support EJB.

SmartHealth, a health care consulting division of EDS Canada, in Winnipeg, Manitoba, built its own application server. But Douglas Olender, a systems engineer at SmartHealth, said he's hesitant to use the commercial crop. "You want to be able to move from platform to platform," he said.

Sun officials have pledged to do an EJB reference implementation and compatibility tests, but the timetable for the project is another question: They haven't specified one. □

Solaris 2.7 reflects growing Sun support for Windows NT

By Jaikumar Vijayan

UNIX MAY STILL be the core of Sun's server universe, but the newest version of its Solaris operating system — scheduled for release this week — also reflects a growing accommodation of Windows NT in Sun Microsystems Inc.'s long-term plans.

Solaris 2.7 is expected to include enhanced 64-bit support, more Java and Web-serving capabilities and scalability clustering. Also in the cards are technologies that make it easier to install Solaris applications, and better partitioning support and interoperability with Windows NT (see chart).

The features are as much an attempt to boost Unix application performance as they are a way to convince skittish users that Sun's anti-NT hardware stance will not maroon them on a Unix island, users and analysts said. With the latest enhancements, Sun is trying to make a strong case for sticking with Unix at the high end. But its moves to coexist with Microsoft Corp.'s Windows NT make sense, as some Unix users are putting NT on the desktop for smaller applications, said Rex Hays, a design engineer in the advanced development product group at Eastman Kodak Co. in Rochester, N.Y.

"If Sun wants to play in the enterprise market, they are going to have to support [Windows NT]," Hays said.

A key interoperability feature supported on Solaris is a technology licensed from AT&T Corp. that Sun will start shipping separately early next year [CW, Sept. 14]. The technology, known as Project Cascade, runs Windows NT services such as file, print and user authentication natively on Solaris.

This capability is expected to enable NT services to run on a more scalable and reliable operating system and on fewer, more robust servers, said Hugh Allan, manager of information technology at Dunlop Tire Co., in Amherst, N.Y.

Solaris 2.7 from Sun will support:

- File sizes greater than 1T byte through full 64-bit addressing
- Single-system image capability for more efficient scaling
- Easier application installation through support for InstallShield
- Native support for NT services such as file, print and user authentication

MORE CHOICES

"Sun's Cascade technology will give us more options" to manage NT services, Allan said. Dunlop's business-critical applications run on Sun servers, but its safety systems and production reporting systems use NT servers.

Continuing on a path it set with last May's release of Solaris 2.6, Sun will offer the latest release as a range of modules with features aimed at categories of users such as Internet service providers, power desktop users and large-application users. □

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	# Of Developers	Develop Time (mos.)	Person Mos.	With TNG Framework
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Calendar Management	5	8	40	Available Now
Virus Detection	3	7	21	Available Now
Reporting	4	5	20	Available Now
Business Process Views™	6	7	42	Available Now
Event Management	15	18	270	Available Now
Delivery Timeframe			583	SHIP Today

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Employee raiding cases hard to prosecute

▸ *Proprietary systems bolster Wal-Mart suit*

By Barb Cole-Gomolski

WAL-MART STORES INC.'s lawsuit against Amazon.com Inc. and Drugstore.com Inc. over a mass defection of IT staffers should raise a red flag for IT departments struggling in a tight labor market.

IT LABOR SHORTAGE

Such cases are hard to win even when large numbers of employees are involved.

"Raiding cases are very hard to prove," said Adin Goldberg, a partner at New York law firm Whitman, Breed, Abbott and Morgan. The plaintiff has to prove that the employees who left took intellectual property with them and that using that information will harm their former employer, Goldberg said.

Bentonville, Ark.-based Wal-Mart also names Amazon.com's CIO and venture capital firm Kleiner Perkins Caufield & Byers in the suit. It alleges that those parties violated the Arkansas Trade Secrets Act in hiring away about a dozen Wal-Mart employees and former consultants who had intimate knowledge of the retailer's proprietary data warehousing, distribution and merchandising systems. The suit asks for an injunction forbidding them from using any Wal-Mart systems knowledge.

Goldberg said the fact that Wal-Mart's systems are proprietary will bolster the intellectual property portion of the suit. What will be harder to prove is that the defections will significantly harm Wal-Mart, he said.

Lawsuits over personnel raiding aren't new. To date, most have involved workers going to a competitor (see chart), and the companies that prevail in those cases tend to have written noncompete agreements with employees.

RAIDING PARTNERS

Case	Outcome
Borland sued Microsoft in 1996 for hiring 34 of its employees over a two-year period	Settled out of court; terms not disclosed
Last year, Montgomery Ward accused Sears Roebuck of raiding	Restraining order issued against Sears, which later agreed not to recruit from Montgomery Ward during its bankruptcy proceedings
This year, Wal-Mart sued Amazon.com, Drugstore.com and a venture capital firm for an alleged raid on its IT staff	Case is pending

OUTLOOK

However, the increased competition for information technology labor is likely to lead to more raiding cases of all types, observers said.

When it comes to talent, "we're competing with the systems integrators more so than our competitors," said Bill Turner, assistant vice president of technical services at Standard Insurance Co. in Portland, Ore. "We've yet to be a victim of a raid, perhaps because most of our competitors are located on the opposite coast."

Even though large raids are rare, companies are taking steps to protect themselves. Goldberg said he has seen increased interest among employers in nonsolicitation agreements, in which employees agree not to solicit customers, prospective customers or other employees if they jump ship.

Those agreements tend to hold up well in court, according to Goldberg.

Also, more companies are requiring that employees sign written noncompete agreements, something Wal-Mart didn't do. However, noncompete agreements have proved less resilient in court, Goldberg said.

And there's the growing use of agreements that require employees to repay the costs of any training they may have received if they leave a company within a certain period after completing training.

Those agreements can be hard to enforce, however [CW, March 10, 1997].

In addition to written agreements, thorough exit interviews also can prevent employees from making off with trade secrets, said Peter Chen, a partner at the law firm of Wilson Sonsini Goodrich & Rosati in Palo Alto, Calif.

BE CAUTIOUS

"Insist that employees turn over the proprietary property of the company," Chen said. That includes items such as laptop computers, diskettes and Rolodexes.

According to Gene Raphaelian, an analyst at Gartner Group Inc. in Stamford, Conn., the best way to prevent a raid is to "pay your employees well, give them equity in the organization and allow them personal and intellectual freedom."

Still, there's no guarantee that employees won't defect, especially "when an Amazon.com comes knocking on your door," he said. □

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Ford links designers with innovative network

▸ *Workers collaborate, communicate in real time*

By Bob Wallace

FOR DESIGNERS and engineers at Ford, cutting product development time is Job One.

The automaker is building a worldwide network that supports computer-aided design (CAD) and videoconferencing and already has helped far-flung designers reduce the time it takes to develop some new vehicles from five years to two.

The global network lets designers sitting at their CAD stations collaborate on car designs in real time, using three-dimensional representations of prototype vehicles. That replaced the long and arduous process of constantly revising paper drawings and using clay models.

PETER YATES

Ford's Ron Wong (left) and Ted Derwa have provided the tools to help reduce vehicle development time

"We were challenged to reengineer all our core processes and saw videoconferencing as a way to improve communications and teamwork around the world," said Ted Derwa, director of the technical services office at Ford Motor Co. in Dearborn, Mich.

The bandwidth-hogging CAD and videoconferencing applications, among others, helped drive Ford to build an international Asynchronous Transfer Mode network that simultaneously supports voice, data and video traffic among 120 designers on five continents. It serves 30 sites in 11 countries and will be extended to 12 more sites by year's end.

Ford's global design network makes it a leader among automakers, said John Waraniak, an auto industry analyst at Benchmarking Partners Inc. in Cambridge, Mass. The high-tech collaboration "will enable them to compete against time by getting from concept to market faster, better and more profitably than their competitors," Waraniak said.

Though it's increasingly common for automakers to provide videoconferencing to their designers, Ford is the first to build an international network that links designers, experts said.

"This [effort] is far-reaching. It allows people around the clock and around the world to access a design and recommend and make changes while it's in the formative stages, thereby preventing costly engineering changes downstream," Waraniak said.

"Decisions can be made in minutes or in hours as opposed to in days or weeks," Derwa explained. "And the quality of decisions has improved because of the collaborative decision-making."

Also, problems are more easily spotted — and solved — when designers are viewing the 3-D model than when they were working with drawings and clay models, said Ron Wong, manager of Ford's infrastructure support department.

Before the CAD/videoconferencing network, paper drawings and magnetic tapes were sent overnight express back and forth between Dearborn and designers around the world. And near the end of the process, designers from various locations typically had to travel to Ford's U.S. headquarters for design review meetings, Wong added.

BUILDING A TEAM

"We'd print out drawings that would be used for reviews with manufacturing and assembly groups," said Ed Jones, chief engineer for Body CAD at Ford.

"The problem was that after the meetings, everyone would take a copy of the drawing back to their departments, mark them up with their own set of changes and bring them to the next week's meeting," he said.

Now, instead of meeting and then going off to work on their own, all parties gather regularly in a videoconferencing room for an interactive design review meeting where changes are made as a group. □

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Java standards process explained

Sun Microsystems Inc. is seeking to clarify confusion about the Java standards process and open up the process to other companies.

Several vendors have bristled under Sun's control in the past, and the newly proposed process still leaves Sun with several key elements of control [CW, Oct. 12 and Oct. 19].

That isn't a concern just for vendors — it's also a worry for users, who fear that any fragmentation will cloud Java's future. Computerworld *senior editor Carol Sliwa last week interviewed two executives from Sun's Java Software division, President Alan Baratz and technology and architecture vice president Jim Mitchell, about the new process.*

On the major differences between the new and old processes:

MITCHELL: Writing it down, making it auditable, making it so that people can see the input that comes in during the process. . . .

[Also,] it will allow third parties to go ahead and develop things . . . without Sun having to be involved . . . .

On making the process more democratic:

BARATZ: The process is far more democratic than the development process that is used in any other company, even more democratic than [with] open source [products, where a small group of people in control decide]. Look at how it works in the Java space: We form an expert group. And it's that group that makes the decision.

On Sun's level of control picking the group that will work on a specification and its leader:

MITCHELL: Our reasons [had] better be good because everybody will see who the candidates were and what our reasons were. That's an amount of scrutiny that no one, not even the standards bodies, open themselves to.

BARATZ: Sun developed the technology. We've defined the process for ensuring that it remains neutral. Frankly, there isn't anyone else in the industry that cares as much about preserving the neutrality of this technology as Sun does. Who would we turn it over to? We have a track record. Every time we have been called for not having done something properly, we've gone back, evaluated and fixed it if it needed to be fixed.

On opening the process:

MITCHELL: We're opening up this process, but we're doing it a step at a time. But we're not going to go overboard . . . because the day we do that, the big guys will come out, and they can spend lots of money, and [there] will be fragmentation. □

Users say they won't launch major server-side projects without a standard Java platform. Page 4

Banks back certificate architecture

▸ *Effort could help spur business E-commerce*

By Sharon Machlis

EIGHT MAJOR U.S. and European banks last week launched a for-profit venture aimed at helping businesses confirm the identities of corporate trading partners over the Internet.

Backers said the effort could provide a major boost to business-to-business electronic commerce by offering a standard digital certificate architecture that all institutions can use. Such certificates help prevent spoofing, where hackers can assume the electronic identity of someone else.

"It's a key missing link," said Guy Tallent, vice president and electronic-commerce strategy executive at The Chase Manhattan Bank Corp. in New York. Founding banks foresee a network of financial firms that can each issue certificates to its own customers.

Among the banks launching the venture are BankAmerica Corp., Bankers Trust Corp., British investment house Barclays PLC, Chase Manhattan, Citigroup Inc. and Germany's Deutsche Bank AG. Also involved is security technology firm CertCo in New York.

USER APPEAL

Though other so-called certificate authorities already exist and more are expected, the backing of major banks appeals to some users.

"I think it's a fantastic approach," said Patrick Stewart, former CIO at Weirton Steel Corp. and now interim president of MetalSite, a Web site launched by three major steel companies that will include online selling. But Stewart said he would like to get an entire suite of services, including letters of credit and bill processing, and not just the certificate.

For now, the banks' digital certificate venture is still in its nascent stage: Incorporation of the as-yet unnamed enterprise and pilot technology tests are slated for early next year. Industry watchers said it remains to be seen whether the banks can effectively cooperate to offer all they promise and whether there will be lengthy delays.

"There's a big question mark [on] how the individual banks are going to implement it," said Scott Smith, an analyst at Current Analysis Inc. in Sterling, Va. "And when you mix banks and technology, it can be a long-term play, to be polite."

But if the project delivers what's been advertised, it could provide a strong boost to global electronic commerce, Smith added.

The joint venture would become a "root," or top-level certifying authority, which would allow member financial institutions to issue certificates to customers. The root authority ensures that members stick to uniform technology, contracts and business practices. □

Digital certificate venture participating firms

- **ABN AMRO Bank,** Amsterdam *(www.abnamro.com)*
- **BankAmerica Corp.,** Charlotte, N.C. *(www.bankamerica.com)*
- **Bankers Trust Corp.,** New York *(www.bankerstrust.com)*
- **The Chase Manhattan Corp.,** New York *(www.chase.com)*
- **Citigroup Inc.,** New York *(www.citigroupinfo.com)*
- **Deutsche Bank AG,** Frankfurt, Germany *(www.db.com)*
- **Hypo Vereinsbank,** Germany *(www.hypovereinsbank.com)*
- **CertCo Inc.,** New York *(www.certco.com)*
- **Barclays PLC,** United Kingdom *(www.barclays.co.uk)*

ERP vendors face support issues at users shows

By Craig Stedman

AS ORACLE CORP. and PeopleSoft Inc. wrestle for the No.2 spot in the ERP market, their respective user camps will gather at back-to-back conferences in the next two weeks.

And each vendor has some big questions to answer when it faces the users — Oracle this week in Hawaii and PeopleSoft next week in San Francisco.

Sales of Oracle's enterprise resource planning software have been flat since early this year, and the company is trying to convince users to adopt the thin-client network computing approach mandated by its latest application release.

PeopleSoft is rushing to improve support for global users, application integration and vertical markets. Meanwhile, the Pleasanton, Calif.-based company last week said its revenue growth is expected to slow considerably in the months ahead partly because of intensified price competition.

Officials at the independent Oracle Applications Users Group, based in Atlanta, said Oracle's network computing strategy will be one of the top issues at the user group's fall conference, along with technical support and upgrades needed for year 2000 compliance.

Louisville, Ky.-based LG&E Energy Corp., which is mulling whether to switch its Oracle applications from fat PC clients to the new approach, will have staffers in Hawaii trying to find out how early users are faring with Internet-based thin clients and application servers.

Mike Spurlock, director of utility accounting and reporting at LG&E, said network computing could make it easier to open up the company's corporate financial data to remote users in other parts of Kentucky. "But we want to make sure the timing is right and the technology is mature," Spurlock said.

PeopleSoft, which runs its own conference, is expected to detail plans for an application upgrade due by the middle of next year. PeopleSoft 8 is supposed to include promised technology aimed at easing the task of tying in homegrown and third-party applications, along with increased global functionality such as a European payroll module.

Wider support for foreign languages and local regulations "is absolutely key to us," said Jim Dileo, senior vice president of worldwide IT at The MacManus Group, a New York advertising and public relations firm that is installing PeopleSoft's human resources, finance and project management software. The applications initially are being used in the U.S., but Dileo said MacManus expects eventually to expand them to its 100 overseas offices.

The company's business increasingly comes from multinational clients, he said, "and we want to be able to support them on a uniform basis."

PeopleSoft also trails rivals such as SAP AG on application integration, said Joshua Greenbaum, an independent software analyst in Berkeley, Calif. But, he added, Oracle is the one that really needs "to explain how it's going to regain market leadership, because right now, it just doesn't have it." □

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Expert's death a loss for Net domain group

By Matt Hamblen

NO SINGLE PERSON has ever run the Internet alone, but Jon Postel came close.

Before his unexpected death at age 55 on Oct. 16 in Los Angeles following heart surgery, Postel ran the government-funded Internet Assigned Numbers Authority (IANA), which made him the czar of allocation and assignment of the world's Internet domain names and addresses.

Postel was part of a small group of computer scientists who in 1969 created the Advanced Research Projects Agency Network (ARPANET), precursor to the Internet. He headed the IANA from the Information Sciences Institute, a branch of the University of Southern California in Marina del Rey, Calif.

Now that his long-haired, bearded and bespectacled presence is gone, some Internet observers worry about the stability and security of the IANA and whether

The recent death of Internet domain czar Jon Postel has stirred worries about the IANA's stability and security.

the new plan to move its functions from government to the private sector will stall. Postel had worked feverishly on Internet reforms and drafts of bylaws for the IANA's nonprofit replacement in the weeks before he died, testifying before Congress and posting papers online.

In an interview last week, White House Internet adviser Ira Magaziner predicted there will be no delay in the movement toward the nonprofit Internet Corporation for Assigned Names and Numbers (ICANN). The ICANN will set policies for the sale of domain names now that the government is ramping down its contract with Network Solutions Inc. in Herndon, Va.

Last week, officials at the U.S. Department of Commerce called the ICANN a "significant step toward privatizing managing of the domain name system." But they also urged IANA staff to change the ICANN's proposed bylaws to include a membership-based structure to provide representation from all Internet sectors.

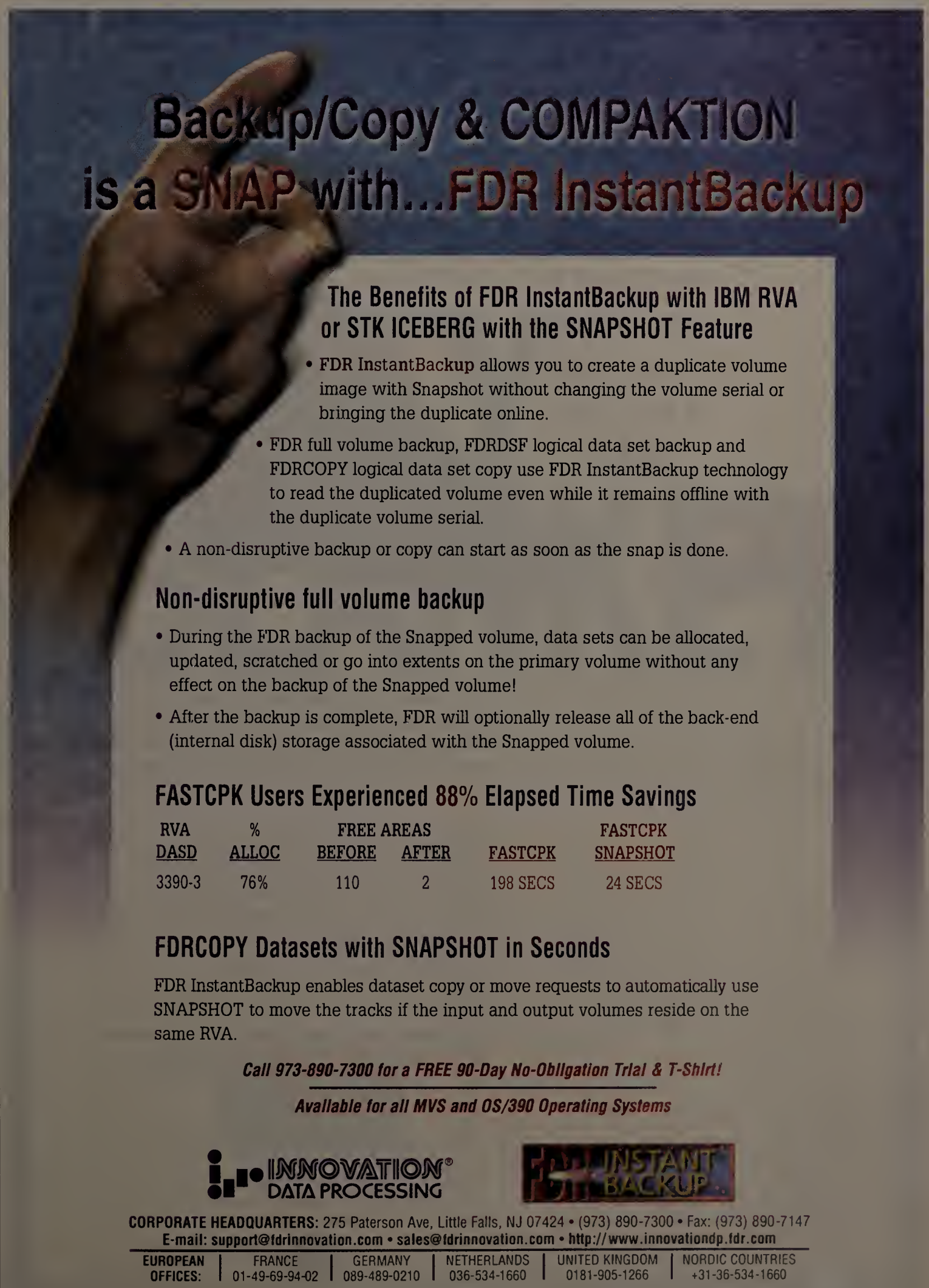
David Conrad, former head of the Asia Pacific Network Information Center, a regional registry to which the IANA allocated IP addresses, predicted that without Postel, squabbles over the ICANN's future will drag on with "jockeying for position by the various factions" seeking power over the ICANN board.

"Jon was a voice of reason and calm at the eye of the storm" over Internet governance issues, said Jim Sterne, president of Target Marketing Inc., a Web commerce consultancy in Santa Barbara, Calif.

B. K. DeLong, director of the New England chapter of the World Organization of Webmasters in Boston, said Postel favored a Net that would be kept free for passing information and not used for marketing and commerce. "I really think with Jon Postel gone, we need somebody with his exact views," DeLong said.

Vint Cerf, senior vice president of Internet technology at MCI WorldCom Inc., praised Postel's "selfless service" to the Internet's growth without regard for personal material gain. Postel provided "steadfast service for decades, moving when others seemed paralyzed, always finding the right course in a complex minefield of technical and sometimes political obstacles," Cerf said.

In July, Postel received the silver medal of the International Telecommunications Union in Geneva for outstanding contributions to development of the global information infrastructure. □



Managing outside help

CONTINUED FROM PAGE 1

biggest increases coming in systems development and integration, according to Gartner Group Inc.'s Dataquest in San Jose, Calif.

"It's raining cheap technology, which has created a challenge for companies who need to integrate it" and haven't the skills to do so in-house or the time to develop them, said Robert J. Steinerd, a Gartner Group analyst.

But companies also need technology-savvy people to manage the integrators.

That's where a New Age department is coming in. As Gartner and some big user companies see it, IT will spend less and less time actually delivering services to end users and more time managing outside resources.

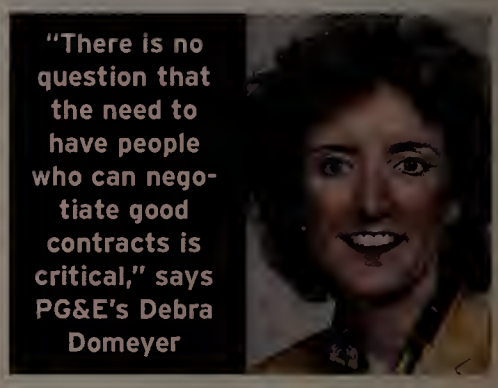
That will call for negotiating, contracting and project management skills.

Forward-thinking companies already are making the shift.

Among them is San Francisco-based PG&E Energy Services. The company's first IT hires last year were neither Java experts nor object-oriented database gurus, but rather project managers with prior experience managing outside resources.

"There is no question that the need to have people who can negotiate good contracts is critical," said Debra Domeyer, CIO at PG&E.

Among other things, good negotiating means getting vendors to provide only experienced consultants for the duration of a project.



"There is no question that the need to have people who can negotiate good contracts is critical," says PG&E's Debra Domeyer

"I will not sign a contract without stipulating that people who start on the project stay on the project," Domeyer said. The reason: "A lot of [service] companies do the old bait and switch. They bring along their more senior people and say, 'This will be who is on the project.' But the next day, after the contract is signed, they say, 'Oops, we had to change that,' " she said [CW, June 29]. That's exactly the kind of pitfall that business and IT staffers at Tribune Co. in Chicago are learning to spot as part of the company's new technology leadership development program (see related story, page 39). The two-year, hands-on program hones staffers' negotiating, contracting and management skills by placing them in charge of consultants on IT projects.

WATCH YOUR LANGUAGE

"They may have to hire technology consultants to [do] a project. They also work with our legal department on [drawing up] consultants' contracts," said Sharon Mandell, director of advanced technology at Tribune. The program also teaches staffers to be on the alert for consultants' high-tech jargon and not to be intimidated by it.

"I joined the company when it was in the midst of a major Web project with an outside consulting company," Mandell recalled. "And the outsourcer was baffling [Tribune staffers] with tech jargon. These guys came in and knew object-oriented databases and Java cold, and they were talking to a manager who had never touched that stuff."

At American Commercial Barge Lines in Jeffersonville, Ind., IT staffers rotate through different departments to better learn the business.

"The in-house IS person is becoming more of a business translator to the third-party consultant," said Chief Financial Officer Jim Wolff. "The consultants that come in really don't know our business. They know the package. IS is explaining how a barge moves up the river or how it gets constructed." □

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FRANKLY SPEAKING

Readers on Y2K reboot

FRANK HAYES

Looks like I'm not alone on this year 2000 reboot idea. Your comments, questions and suggestions keep rolling in on the option of shutting down your systems on Dec. 31, 1999, as one last bit of insurance against year 2000 catastrophe.

"I am managing the Y2K project at a 1,600-person corporation spread across 15 sites nationwide," one reader wrote. "We have a mixed environment that includes mainframes, Unix, NetWare and NT servers, as well as a PC/laptop for every employee and 100 home machines that access the network. How would you implement such a shutdown and reboot — what would be the order of execution?"

One approach is to pick a time — say, 11 p.m. Eastern time, 8 p.m. Pacific — and shut down all your sites in parallel, starting with PCs (your users can shut them down before leaving Friday), then networks and servers, then mainframes. Once you're sure you have power and phones at all sites, bring the machines back up in reverse order.

But why trust a generic approach? After all, you've got real experts right there. The people running IT at those 15 sites know your operations better than any pundit, consultant or year 2000 celebrity. Find out what *they* recommend, get the best ideas and advice you can — then trust your knowledge, skills and people.

With the year 2000, the last thing you want to be is on your own.

PCs pose their own special year 2000 reboot problems. "Check the PC's idea of the date when you power it on (and before booting the operating system) the next day!" wrote a hardware/software designer from Washington. "Some PC BIOSes (especially older ones) may assume the clock has been corrupted and set the date to Jan. 1, 1980, or may simply allow the date to be Jan. 1, 1900."

Actually, by zero hour you should already have tested each PC to make sure its boot sequence gives a year 2000 clean date. But it turns out even new PCs may have a subtle bug that will randomly change the date in the future. You can find out more about this "time dilation" effect at *www.intranet.ca/~mike.echlin/bestif.*

And the next 14 months are a great time for routine maintenance, especially on systems that run continuously for months or years, a reader in San Diego wrote. "When they're powered down for any period of time, the disks quite often crash and won't spin up after that. Seems that the lubrication gets thin and doesn't get back into place fast enough when the disk is turned back on."

Coordinating shutdowns for far-flung organizations is a special problem. "For global operations such as ours (and ours is comparatively small), midnight occurs 24 times across time zones. Sounds like we'll all have a fun weekend!" This man either has a great attitude or a very strange sense of fun.

And this comment from a New Zealand reader: "We move into the new millennium 15 hours ahead of you; if we here in New Zealand leave *on* a similar system to one you service there in the U.S., you could have 15 hours' head start on any issues that might be useful in that time frame."

Great idea — if we can keep the Internet going through zero hour to pass the word around the world.

Meanwhile, if you're in the U.S. and not already passing the word about year 2000 fixes with suppliers and customers, now's the time to start. Legislation protecting year 2000 information exchanges was signed into law last week. If you've been waiting, check with your company's legal department, then get ready to swap dirty details with your business partners.

With the year 2000, the last thing you want to be is on your own. □

Hayes is Computerworld*'s staff columnist. His Internet address is frank_hayes@cw.com.*

SHORTS

Intel antitrust trial delayed

A judge delayed the antitrust trial of Intel Corp. from Jan. 12 to Feb. 23, granting a request by both the vendor and the Federal Trade Commission for more time to prepare. The FTC sued Intel in June, accusing it of threatening and withholding key semiconductor information from competitors. Intel has denied the charges.

Clinton signs tech legislation

President Clinton last week signed an omnibus spending bill that includes several high-technology measures, including the Internet Tax Freedom Act, which puts a moratorium on new Internet taxes for three years. Also included: legislation to nearly double the number of foreign workers allowed in the U.S. on H-1B visas, to protect children using the Internet and to promote digital signatures.

Web porn law challenged

Several civil liberties groups have filed a court challenge to the latest federal legislation that seeks to regulate pornography on the Internet, charging it censors constitutionally protected online speech. The Child Online Protection Act makes it a crime to knowingly communicate for commercial purposes material considered harmful to minors. After a similar battle over the Communications Decency Act passed two years ago, the U.S. Supreme Court deemed that bill unconstitutional.

Alleged spammer sued

A Salem, Ore., business owner last week became the first person sued under Washington state's antispam law. The state attorney general sued Jason Heckel, 24, for sending unsolicited E-mail to millions of Internet users to promote an online booklet, "How to Profit from the Internet." The suit alleges that Heckel used a misleading subject line to trick recipients into reading his sales pitch and providing an invalid return E-mail address. Attempts to reach Heckel for comment were unsuccessful.

ADP offers Web payroll

Automatic Data Processing Inc. (ADP) in Roseland, N.J., has launched an Internet-based payroll processing service for small to midsize businesses and plans to introduce a similar service for large customers next month. Pricing for the service announced last week is $400 to $1,300 annually per employee. Customers of the new service can enter payroll data on ADP's secure Web site instead of by phone or paper documents.

NEC chair resigns amid scandal

NEC Corp. Chairman Tadahiro Sekimoto resigned Friday in connection with a scandal that has enveloped the Japanese computer and communications equipment vendor. In a statement, the 71-year-old Sekimoto said he felt regret about the scandal, in which two NEC subsidiaries overbilled Japan's Defense Agency and in turn offered jobs and favors to former agency officials.

Loss spurs Open Market layoffs

Open Market Inc., the Burlington, Mass.-based maker of electronic commerce software, said it will lay off 20% of its workforce — close to 100 people — following a $6.6 million loss in the quarter ended Sept. 30. Revenue in the third quarter declined to $14.4 million, down from $15.7 million in the same quarter a year ago. President and CEO Gary Eichhorn blamed the disappointing results on shortfalls in Folio CD-ROM software sales, publishing royalties, merchant revenue and problems in Asia.

Online music merger

Online music sellers CDnow Inc. and N2K Inc. announced Friday that they have agreed to merge, creating a combined entity with 1.2 million customers. The merger, when completed early next year, will create the third-most heavily trafficked online retailing site, according to MediaMetrix Inc. audience figures. The joint entity will initially be called CDnow/N2K Inc. CDnow, based in Jenkintown, Pa., is the industry's leading Web music store; N2K, in New York, operates the popular Music Boulevard site.

Intel buys Shiva

Intel last week announced plans to buy virtual private network and remote access products maker Shiva Corp. in Bedford, Mass., for about $185 million. The Santa Clara, Calif.-based chip maker will run Shiva as a wholly owned subsidiary that will be part of its Network Products Division. The deal is subject to shareholder and regulatory approval.

SHORT TAKES Netscape Communications Corp. last week shipped its new Communicator 4.5 groupware/browser client. . . . Sun Microsystems Inc. acquired Beduin Communications Inc., a privately held Canadian company that makes Java application products for the consumer device market, for an undisclosed amount. . . . Sun last week said it will offer NetDynamics Inc.'s application server middleware as a bundled option on Solaris servers. The technology lets users build applications that can access back-end databases on multiple platforms via the Web.

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More earnings reports from last week:

Fiscal quarter ended Sept. 31, 1998	REVENUE		NET INCOME (LOSS)	
COMPANY	1997	1998	1997	1998
Computer Associates International Inc.	$1.12B	$1.22B	$271.9M	$293.3M
EMC Corp.	$732.6M	$1B	$132.6M	$201.3M
IBM	$18.6B	$20.1B	$1.36B	$1.49B
Informix Corp.	$150.2M	$185.2M	($110.5M)	$19M
Lucent Technologies Inc.	$6.93B	$8.04B	($597M)	$388M
Microsoft Corp.	$3.13B	$3.95B	$663M	$1.6B
PeopleSoft Inc.	$217.1M	$351.3M	$28.7M	$44.2M
Sybase Inc.	$233M	$210.2M	($6M)	$2.2M

No economic crisis for high-tech

By Stewart Deck

ECONOMIC SLOWDOWN? What economic slowdown?

The Asian economic crisis hasn't yet had a huge effect on the financial results of leading information technology vendors, analysts said, because those vendors don't count on Asia for a large portion of their sales. Microsoft Corp., IBM, SAP AG and Computer Associates International Inc., among others, last week registered strong quarterly earnings that all topped analysts' expectations (see chart).

Michael Geran, an analyst at Donaldson, Lufkin & Jenrette Securities Corp. in Jersey City, N.J., said vendors have struck two beneficial chords with the market: "They have stage-managed earnings expectations" and convinced customers of the need to stick with dominant, well-known vendors during what could become a worldwide economic slowdown, he said.

Microsoft said big Windows 98 sales in Europe and Japan helped it beat estimates for its fiscal first quarter, with its $1.52 billion in revenue a 59% increase from last year.

IBM said strong mainframe demand and hard-disk sales, along with its technology services business, contributed to a 10% profit gain (see story at right). Such solid results show "plenty of people are still spending money on IT," said David Wu, an analyst at ABN Amro Inc. in San Francisco. "Europe and U.S. sales were quite strong this quarter. Nobody, it seems, is listening to how bad the world economy is going to get."

Among last week's other winners were the following:

- Networking-gear player Lucent Technologies Inc. beat analysts' expectations.
- Corporate applications market leader SAP saw both its quarterly profits ($221 million) and revenue ($1.2 billion) soar more than 40% from last year's results. Although SAP officials warned that the year 2000 problem will slow its financial growth, a recent poll of leading enterprise application vendors conducted by Boston-based AMR Research Inc. showed that, even in the troubled Asian markets, those companies said they expect sales to rise or to at least remain constant.

But it hasn't been all blue skies. Enterprise resource planning software maker Baan Co. said that when it releases earnings later this week it will post a 13 to 16 cents per share loss on revenue that will total between $190 million and $195 million, far below what analysts had expected. It said global economic conditions and delayed IT purchases because of year 2000-related worries are the cause of its troubles. After the announcement, Baan's stock fell more than 35% in two days. □

HP reorgs to clarify message

By Jaikumar Vijayan

HEWLETT-PACKARD CO. is melding its hardware, software and services groups into a single $15 billion organization designed to deliver a unified message to users and the industry.

The company last week announced the merger of its Enterprise Systems Group and the Software and Services Group into a 44,000-person-strong organization.

In the past, users and analysts have criticized HP's operating divisions for functioning almost like separate companies under the same brand name. Last week's announcement won some praise from users.

"A reorganization like this helps HP present one face to the customer," said Jeff Odom, vice president of information services at Austin Quality Foods in Raleigh, N.C.

The latest move is part of an ongoing HP effort to better marshal its far-flung services and product infrastructure into one integrated effort, said Ann Livermore, vice president and general manager of the newly formed Enterprise Computing Solutions Organization. "One thing you will see . . . is the messages and marketing will be better integrated" and easier for users to understand, she said.

In December last year, HP formed a worldwide software sales organization to market its Internet software and other HP software products. In May, HP reorganized its consulting and systems integration organization in a bid to create a centrally managed group called the Professional Services Organization.

HP's Enterprise Systems Group is responsible for developing, manufacturing and marketing HP's Unix and Intel Corp. servers and its Internet and storage offerings. The Software and Services Group is responsible for products such as HP's OpenView network management suite and Internet-enabling tools.

The merged entity will focus on delivering a range of tightly integrated hardware, software and services capabilities for corporations, Livermore said. □

Mainframe resilience spurs strong IBM sales

By Jaikumar Vijayan

IBM'S UNEXPECTEDLY roaring mainframe sales last quarter may have been ignited more by short-term trends rather than any widespread rush back to Big Iron.

But the strength of the company's performance shows just how enduring the mainframe revival is turning out to be.

"A lot of companies are realizing the value of traditional mainframe strength — like manageability, security and scalability," said Ron Thielen, president of the Share large-systems user group and director of information technology at the University of Chicago.

Also contributing to mainframe resilience is the fact that Unix and other alternatives don't quite stack up to mainframes when it comes to running applications that require huge amounts of I/O or batch-like big honking I/O that S/390 does particularly well," he said.

Much of IBM's immediate mainframe momentum is coming from companies replacing older, very high-end water-cooled systems with IBM's latest Generation Five CMOS mainframes, analysts said. A lot of it also comes from IBM winning back customers it had lost to Hitachi Data Systems Corp. in performance wars during the past two years, said Patricia Cicala, an analyst at Gartner Group Inc. in Stamford, Conn. IBM's new G5 mainframes puts it back on top of the performance pack.

Growth in demand for IBM mainframe MIPS:
(In thousands)

Source: Impact IT, Mountain View, Calif.

SMALLER AND FASTER

IBM's CMOS mainframes are much smaller and consume a fraction of the power that the older water-cooled mainframes did, making them much cheaper to operate. But it's only with the G5 systems that IBM has started shipping CMOS mainframes that are also faster than old [water-cooled] technology at the highest end.

For instance, the University of Chicago last year replaced a water-cooled mainframe with a G3 CMOS mainframe and paid for the upgrade from the savings in maintenance, power and space, Thielen said.

Fueled by a 135% growth in mainframe sales in the same period last year, IBM last week announced that profits rose 10% to $1.49 billion on revenue of $20.1 billion, compared with profits of $1.36 billion on revenue of $18.6 billion a year earlier.

Impact IT, a mainframe consultancy in Mountain View, Calif., estimated that IBM shipped about 319,000 millions of instructions per second (MIPS) in the third quarter of this year, compared with 136,000 MIPS last year. MIPS are the unit by which mainframe sales are measured. Impact IT predicted that IBM will ship an additional 343,000 MIPS in the fourth quarter compared with 238,000 last year.

"But if you ask me if IBM can sustain this growth, the answer is no," said David Floyer, an analyst at Impact IT. He predicted that IBM mainframe sales will instead flatten out at a still-healthy $7 billion annually during the next few years. □

processing capabilities, said Dan Kaberon, parallel sysplex manager at Hewitt Associates Inc., a human resources outsourcer in Lincolnshire, Ill.

"E-mail servers, print engines, computer-bound jobs, document management — there were a number of apps that rushed off of mainframes at their first opportunity because they didn't really need mainframe attributes," said Jonathan Eunice, a consultant at Illuminata Inc. in Nashua, N.H. "Most of those that remain do so because they're either tightly bound to the S/390 environment or they need something

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Plan ahead to cut fat, not bone

▸ *IT-business link more vital in a downturn*

By Robert L. Scheier

THE LAST THING YOU want to be is unprepared when your chief financial officer demands 10%, 20% or even 30% budget cuts from IT.

Such across-the-board cuts can cripple business-critical projects while leaving "nice-to-have" maintenance intact. Having an advance plan for intelligently cutting information technology spending helps protect your most important projects and shows business peers that you run as tight a ship as they do.

Two common tactics are to raise the return on investment IT projects must earn above the customary 15% to 18% and to review even small expenditures — in other words, to play hardball where necessary.

The latter tactic "forces us to get a little more serious with the vendors," said Toby Eduardo Redshaw, CIO at Federal Express Corp.'s Latin America/Caribbean business unit. "You'd be surprised to see how often we get into a very comfortable relationship," he said. "No one's gone back to the vendor and said, 'We're doing more business with you — where's the deeper discount?' "

Cutting outside contractors can be a relatively painless cost-cutting technique. Construction equipment manufacturer Case Corp. in Racine, Wis., doesn't foresee reducing the number of IT employees, said CIO Jim Hatch, but may cut some of the contractors who make up 20% to 40% of the IT workforce. He said he finds it "fairly easy to adjust spending levels in IT by shifting or reassigning these folks."

Pirelli SpA in Milan, Italy, is postponing an Asian implementation of an enterprise resource planning (ERP) because of the slowdown. Case, meanwhile, wouldn't even consider starting an ERP rollout now.

"It's not that the business benefit isn't there," Hatch said, "but the up-front cash [to do the project] probably wouldn't be available."

At the same time, other customers are forging ahead with their ERP plans. Of 12 leading ERP vendors, 11 said their U.S. sales were steady or increasing, according to a study conducted by Boston-based AMR Research Inc. in the past two months. Even in the troubled Asia-Pacific market, seven of the 12 said their ERP sales are steady or rising.

One reason ERP spending is holding up well is that "you don't get cost savings when you're partway into the [ERP] implementation and you slow it down," said Charles Lacefield, vice president of business processes and IT at Dow Corning Corp. in Midland, Mich.

One way to keep important but expensive projects on track is by juggling which components are rolled out first so they ERP system achieves its return on investment earlier.

Dow Corning, for example, is speeding up its migration to client/server computing to reduce mainframe costs. "There's a return from that — a cost reduction," he said, "vs. new [systems development], which are just added cost in the short term."

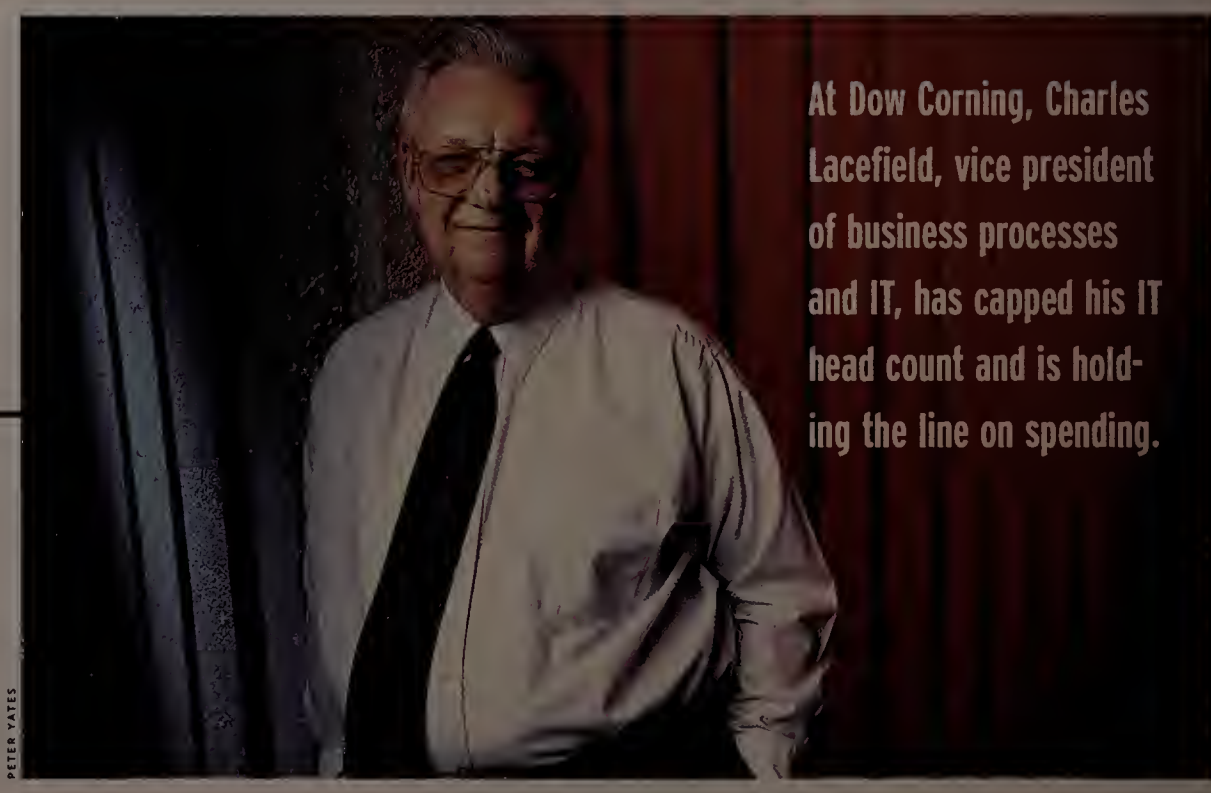
One budget area IT managers must protect is training, said John Harris, managing director of the Information Management Forum, an association of IT executives in Atlanta. "People look at that as not critical," he said. But when training is cut, "the good people in your company start looking around and saying 'This company doesn't value me' . . . so they start to leave."

Redshaw found some relatively easy-to-cut fat on the telecommunications side of his business. "I pulled [out] tons of circuits, leased lines, with some of the major U.S. vendors, to [locations] we could get with VSAT."

In other areas, he's installed IP-based networks that pay for themselves because FedEx can piggyback voice traffic on the same network used for data transmission.

Although it may sound like motherhood and apple pie, the best way for IT managers to prepare for a crisis is to understand the needs of the businesses that use their technology. Though the knee-jerk reaction is to cut IT spending in countries going through a downturn, building an infrastructure for when those economies recover could actually be a competitive advantage," Harris said.

Cutting budgets only where the business can afford it, he said, is far better than "just taking a pencil and starting to cross out line items on the budget" to meet a cost-cutting goal. □



PETER YATES

At Dow Corning, Charles Lacefield, vice president of business processes and IT, has capped his IT head count and is holding the line on spending.

IT budgets dodge global downturn

CONTINUED FROM PAGE 1

that are vital to keeping scarce IT talent.

Not that anyone is predicting bloodbaths in corporate information technology departments. That's because senior executives realize new IT helps them stay competitive and that, just to stay in business, they need to prepare computer systems for year 2000 and the coming of the euro. Companies are still giving the green light to Web commerce systems that bring in low-cost incremental revenue and to systems that help retain existing customers or find new ones, such as data warehouses.

And there's also the hope that financial reform in Japan and interest-rate cuts in the U.S. and Europe will reverse the downturn before it throws the U.S. into recession.

CUTTING TIME

But in these nervous times, the budget knives are out for hard-to-justify projects, nice-to-have maintenance and ballooning network costs.

Of 106 corporate IT executives surveyed this month by *Computerworld*, 28% said their businesses have suffered a drop in revenue or earnings because of the downturn. And about 43% of those whose businesses haven't yet suffered expect to see business decline because of the slowdown in the next year.

Even those IT managers bullish on the economy said their companies are starting to rein in spending. Although only 2% of those IT executives surveyed said it's "very likely" the U.S. will go into recession in the next year, many more — 15% — expect a drop in their IT budgets next year.

A National Association of Manufacturers poll shows that 57% of its board members think there's a high risk of recession in Latin America over the next 12 months.

For example:

- At Dow Corning Corp. in Midland, Mich., Charles Lacefield, vice president of business processes and IT, has capped his IT head count and is holding the line on spending after several years of double-digit increases.
- At Federal Express Corp.'s Latin America/Caribbean business unit in Miami, CIO Toby Eduardo Redshaw has boosted the return on investment hurdle that each IT project must earn and is reviewing even relatively small purchases to make sure FedEx is getting the biggest possible discount.

"I want to get more for each dollar," he says.

- Pirelli SpA, the Milan-based tire and data cabling company, has postponed the rollout of SAP R/3 enterprise resource planning (ERP) software to its Asian operations and delayed linking those offices to Pirelli's intranet.

Ray Sasso, vice president and CIO at food and agricultural giant J. R. Simplot Co. in Boise, Idaho, said he already is hearing a "change in tone" at management meetings where new projects, such as a new human resources system, are being pushed to the back burner.

"The hardest projects to justify are those that support administrative infrastructure," Sasso said. "Everyone knows you have to do them, but they just don't have the quantifiable payback. The era when you could justify those projects with cost savings is long gone."

Other likely areas of cutback, said IT executives, are upgrades of desktop hardware and software such as Windows 98. "Discretionary spending of all types will get a hard look, including [buying] the latest and greatest PCs," said Jim Hatch, CIO at construction equipment manufacturer Case Corp. in Racine, Wis.

Even though ongoing ERP implementations are usually too far along to be killed outright, some ERP customers are cutting back somewhere in the implementation effort. For example, although Dow Corning is continuing its SAP implementation, Lacefield said, it will use the reporting and decision-support tools within SAP rather than buy "some bolt-on [applications], which might give you best-of-breed" capabilities.

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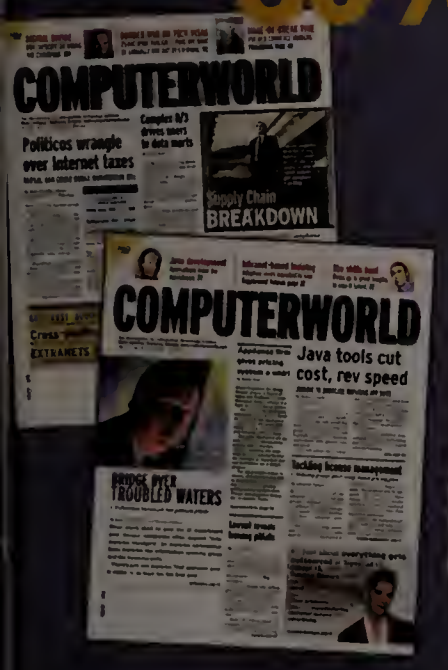

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Euro, Y2K projects will retain budgets

▸ *Survey says most IT execs won't be dealing with budget cuts next year*

By Robert L. Scheier

THERE WILL BE less money for consultants next year. But there will be a steady flow of funds for year 2000 and euro work, and continued investment in any system that brings in more customers or revenue.

Those are among the key findings of a *Computerworld* survey of 106 corporate information technology executives. Despite months of bad economic news from Asia and Wall Street, an overwhelming 85% said they expect their IT budgets to either rise or remain constant next year.

43% of HR executives polled by The Conference Board expect the economic crisis to have a significant impact on their companies.

One reason is that IT departments, as well as outside IT service providers, are scrambling to revamp computer systems so they can recognize the year 2000 and the euro, Europe's new common currency.

Merrill Lynch & Co. in New York, for example, specifically spared year 2000 and euro work earlier this month when it cut 900 consultants, most of whom worked in IT.

"The year 2000 has a nonnegotiable deadline, and that takes precedence," a company spokeswoman said.

Merrill Lynch isn't alone: The *Computerworld* survey showed that year 2000 spending will stay flat, at a mean of 18% of IT budgets.

The financial services giant also isn't alone in cutting consultants: According to the survey, spending on outside IT help will drop from a mean of 11.8% of IT budgets this year to 9.1% of budgets next year.

Spending on infrastructure such as networks is expected to slip, too, from a mean of 31% of IT budgets this year to 29% next year, the survey indicated.

Although Case Corp. in Racine, Wis., is already feeling pain from the downturn overseas, CIO Jim Hatch said he doesn't expect an across-the-board IT budget cut to follow.

Hatch said that's because Case has put control of IT spending in the hands of individual business units, which can decide whether to cut IT or some other area.

Preparing for a possible downturn, IT managers are "really examining their alignment with the business," said John Harris, managing director of the Information Management Forum, an association of IT managers in Atlanta. "This way, they make sure they are spending dollars wisely . . . rather than just taking a pencil and starting to cross out line items in the budget."

IT budgets are faring well so far because senior business management now seems to believe computer systems are critical to staying competitive.

"Law firms that are still using manual systems to organize and manage [documents] are just falling behind the curve, and the client knows this," said Mark Horak, technology manager at Fulbright & Jaworski, a Houston law firm. "We have had cases where two semitrailers couldn't hold all the boxes of paper delivered to our door. It's unmanageable without computers."

GOAL: PAINLESS CUTS

"With the year 2000 approaching and other major projects we have undertaken, it would be very difficult to cut IT spending without hurting the company," said David Smith, vice president of IT at PPG Industries Inc. in Pittsburgh.

Among the business-critical new applications are electronic commerce over the Web, which the survey respondents predicted would rise slightly from a mean of 7% of IT budgets this year to 8% next year.

Even if IT spending isn't cut, there's already been some juggling of projects. One in five of the corporate IT managers surveyed said senior executives had asked them to change IT priorities to prepare for a possible recession.

A recession could actually speed up efforts by Latin American companies to use the Web to sell their products — which have been made less expensive by currency devaluations — in the U.S., said Toby Eduardo Redshaw, CIO at Federal Express Corp.'s Latin America/Caribbean business unit.

And some IT dollars will be freed up as year 2000 repairs are finished next year.

"Our members are starting to wind down their year 2000 activities and beef up these other areas," Harris said. "They're doing worldwide rollouts of new mail systems and that sort of thing."

"You can make the argument that, in bad times, it's even more important to continue with the investment in technology," Horak said. □

Other areas seem safer. Spending on data warehouses, which are collections of corporate data used to better identify market trends, also seems to be holding up. The *Computerworld* survey showed that spending on data warehousing and related decision-support systems will rise from a mean of 5.6% of IT spending this year to a mean of 6.1% next year.

Any project that increases customer retention and purchases is more likely to get funded. Case, which is cutting production because of sagging demand for its construction equipment, has just put the first of four customer service applications into production. "One decision we had to make was whether we should defer the other three, and the answer was 'no way,' " Hatch said.

IT projects also are likely to get funded if they will save a company money in the near future. A recent spate of mergers in the retail industry, for example, require a "significant investment" on the IT side to achieve the desired savings, said Rob Hafker, managing principal at IBM Global Services in Hamden, Conn.

Companies will have no choice but to keep spending to fix software code that makes it impossible for computers to recognize the year 2000 or the euro, several observers said.

"The hardest projects to justify are those that support administrative infrastructure."
– Ray Sasso, J. R. Simplot

To cope, IT managers should benchmark their operations to ensure they are at least as cost-effective as an outsourcer. They also should plan where they would make cuts before senior management demands them and stagger the implementation of IT projects so the highest returns are achieved first (see related story, page 16).

They also need to "get creative" to protect their training budgets because training is key to keeping scarce IT talent, said John Harris, managing director of the Information Management Forum, an association of IT executives in Atlanta.

The recession may even be a boon to IT organizations in Asia and Latin America, as those companies seek to use IT to catch up or even leapfrog U.S. competitors. Demand for data warehousing services in recession-plagued Asia is "up double digits this year over last [and] we expect it to continue," said data warehousing program manager Jim Davis at the SAS Institute in Cary, N.C.

If tough times are coming, the good news is that after years of lip service, senior management finally sees IT as a strategic weapon and will spare the ax — provided the IT organization is lean and mean.

Sasso, for example, said that a recently completed data warehouse and just-in-time inventory management system are even more important for Simplot managers during a downturn.

"When times are tough, you have to be smarter and manage harder," he said. Sasso was referring to his end users, but he could have been talking about IT managers anywhere. □

Senior editors Thomas Hoffman, Barb Cole-Gomolski and Julia King contributed to this report.

Most IT managers aren't concerned about a recession . . .

Likelihood of U.S. entering a recession in the next year:

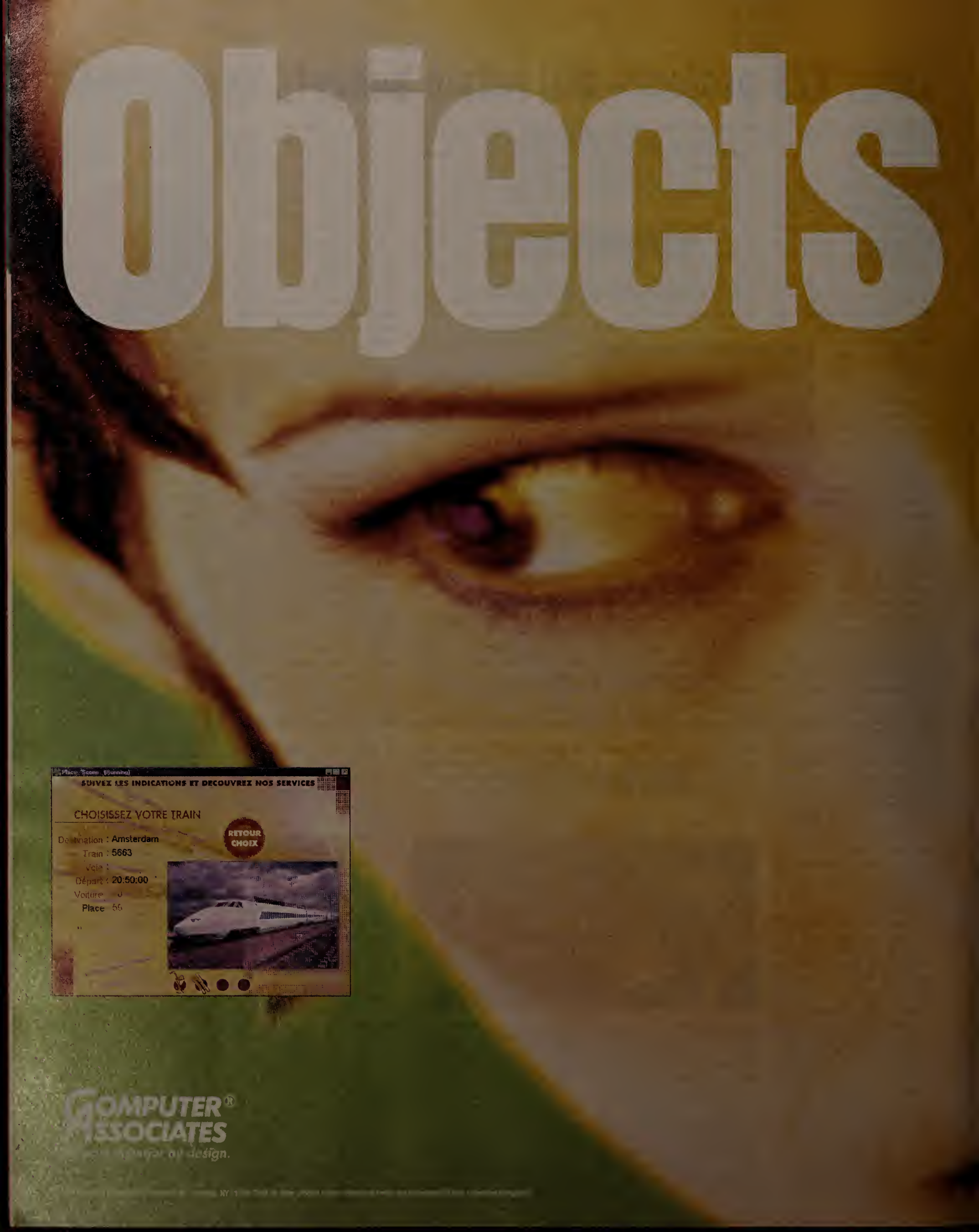
. . . and though many expect their companies to suffer in the next year . . .

If you haven't already seen revenue fall because of overseas economic troubles, do you expect a drop in the next year?

. . . almost all expect IT spending to remain steady or even to rise

Do you expect IT spending to rise, fall or hold steady next year?

Source: *Computerworld* survey of 106 corporate IT managers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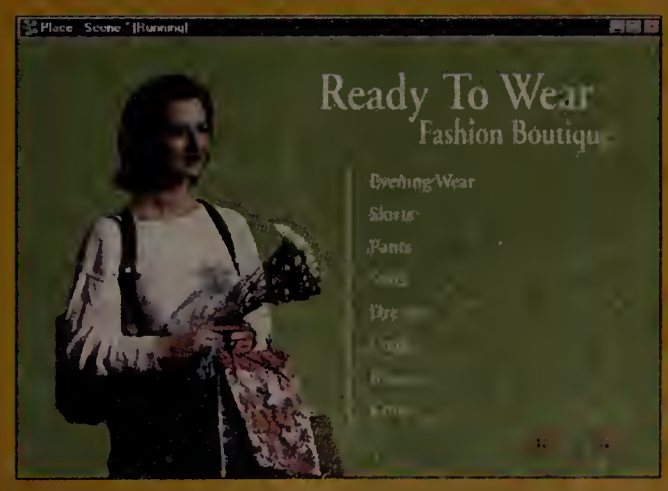

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Scalable servers climb Intel chip ladder

▸ *Xeon chips on tap for Data General, Sequent 'NUMA' systems*

By Jaikumar Vijayan

TWO OF THE leading vendors of Non-Uniform Memory Access (NUMA) servers are revamping their platforms with near-identical upgrades designed to give users better scalability and performance over existing servers.

Westboro, Mass.-based Data General Corp. last week unveiled its AV25000 NUMA servers featuring support for Intel Corp.'s Pentium II Xeon chip. Sequent Computer Systems Inc. this week will take the wraps off a second-generation NUMA-Q 2000 server code-named Scorpion, which, like the Data General box, is based on the Xeon processor.

Apart from the boost in performance over existing Pentium Pro technology provided by the new Xeon chips, both companies also have added the ability to dynamically assign resources to various processes, essentially allowing users to create multiple servers in one box. Both Data General and Sequent have added high-speed fibre connections to subsystems and the ability to cluster with machines as far away as 10 kilometers.

Such capabilities are crucial at a time when fast-growing applications such as data warehousing and enterprise resource planning are pushing the scalability limits of current symmetrical multiprocessing servers, said Richard Partridge, an analyst at D. H. Brown Associates Inc. in Port Chester, N.Y.

Both Data General and Sequent have added the ability to cluster with machines as far away as 10 kilometers.

NUMA is a technology that lets users expand their servers more cost efficiently than symmetrical multiprocessing. It provides the headroom needed for future application growth, said Tammy Lowe, senior director of information systems at Hollywood Entertainment Corp., a video chain based in Wilsonville, Ore.

The chain has added the equivalent of one store every 18 hours in the past year and needs a platform that can accommodate that kind of growth, Lowe said.

The company considered Unix servers from Sun Microsystems Inc. before purchasing eight-processor NUMA-Q 2000 systems from Sequent. "From a scalability and price/performance point of view, it offered the best option," Lowe said.

The latest enhancements to NUMA let users take better advantage of its scalability, said Brian Richardson, an analyst at Meta Group Inc. in Stamford, Conn. With the new partitioning technology for instance, users can consolidate multiple Unix and NT applications on a single platform for ease of management and to save space.

"Users generally are looking at addressing total-cost-of-ownership issues through technologies like these," Richardson said. Similarly, the long-distance clustering feature that both vendors support lets users build disaster-tolerant configurations.

Pricing for an eight-processor Data General server with 1G byte of memory starts at $80,000. Pricing for a Sequent server starts at $200,000 for a quad-processor server with 1G byte of memory. The Sequent server is targeted at high-end users. □

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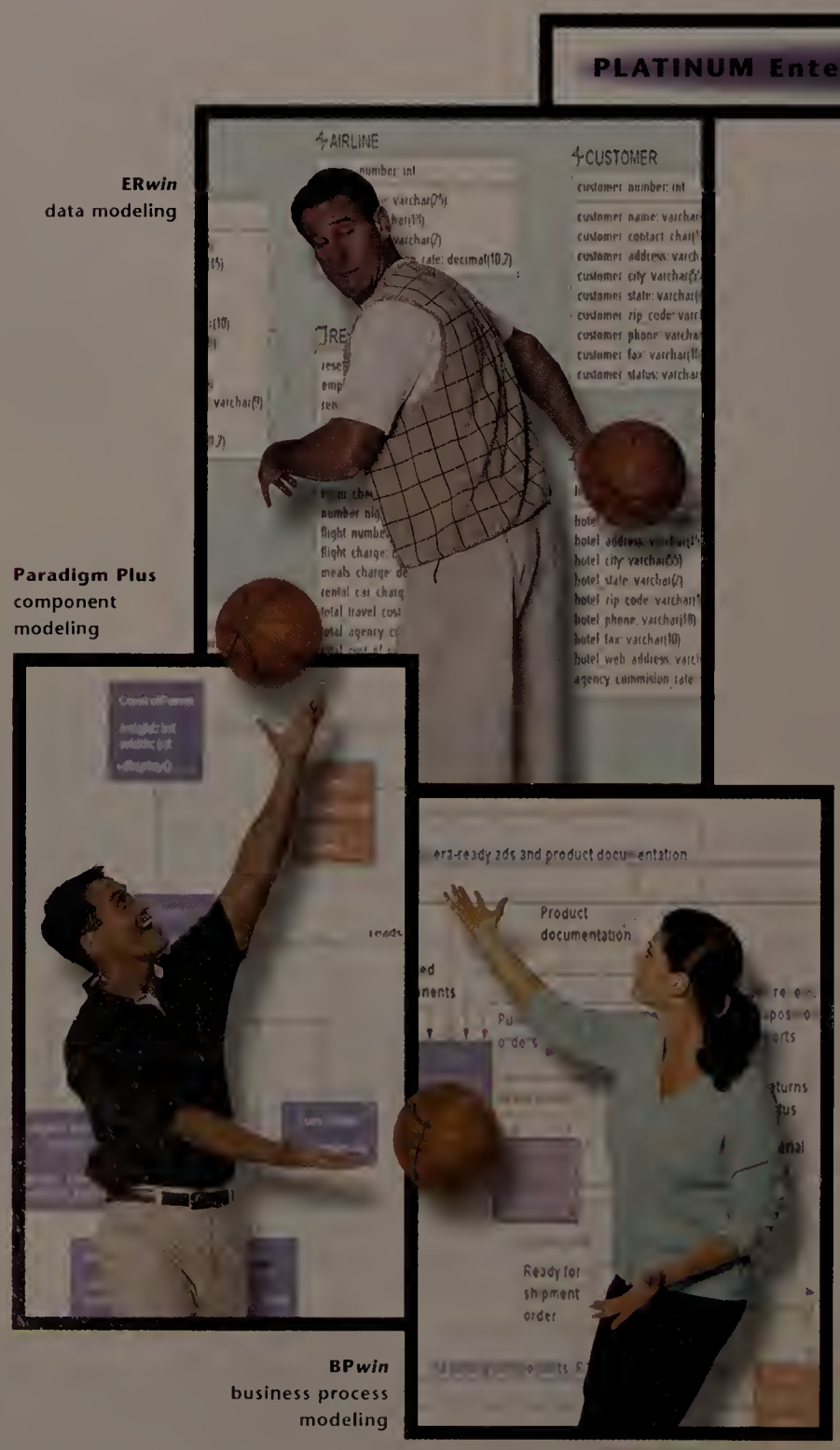

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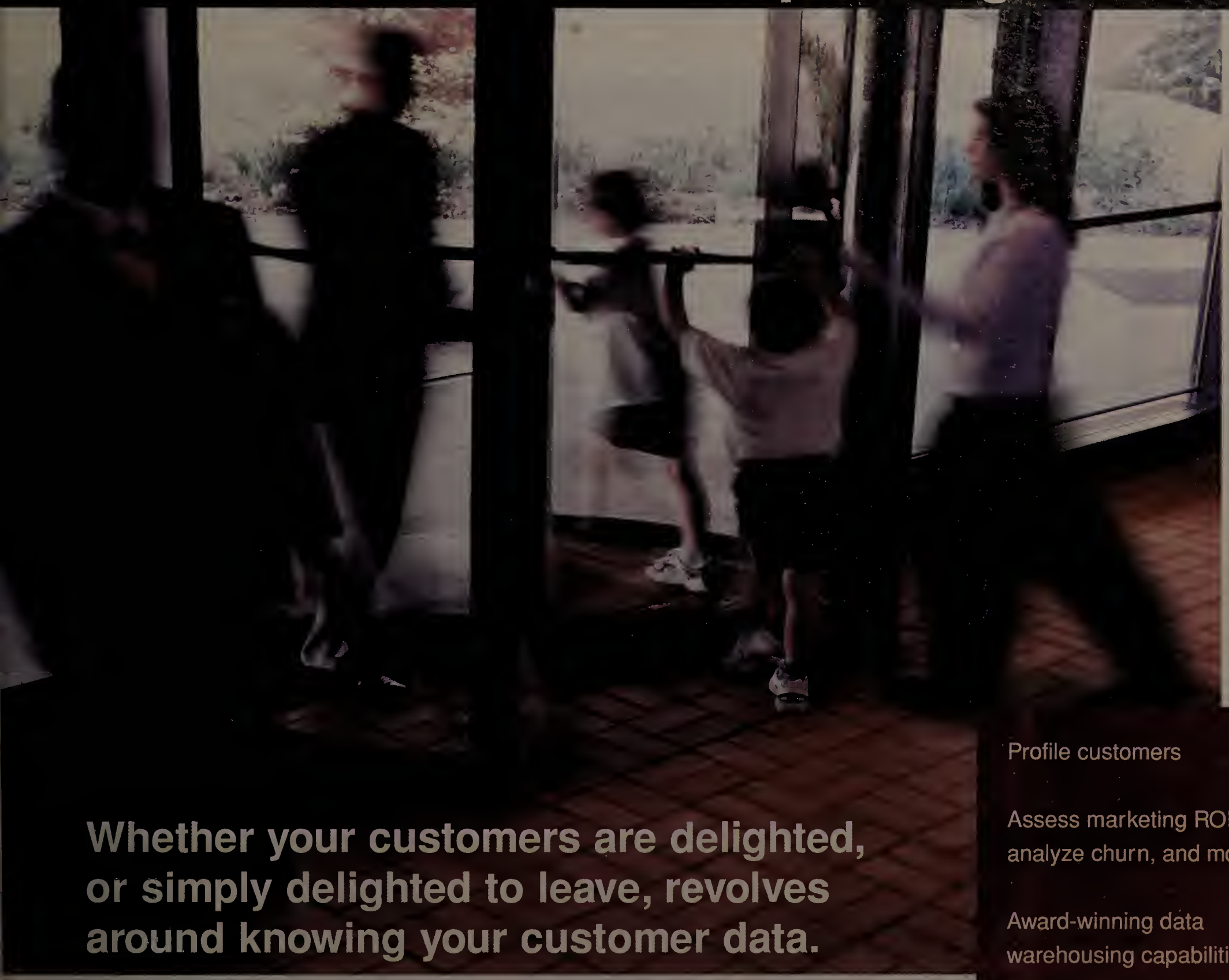

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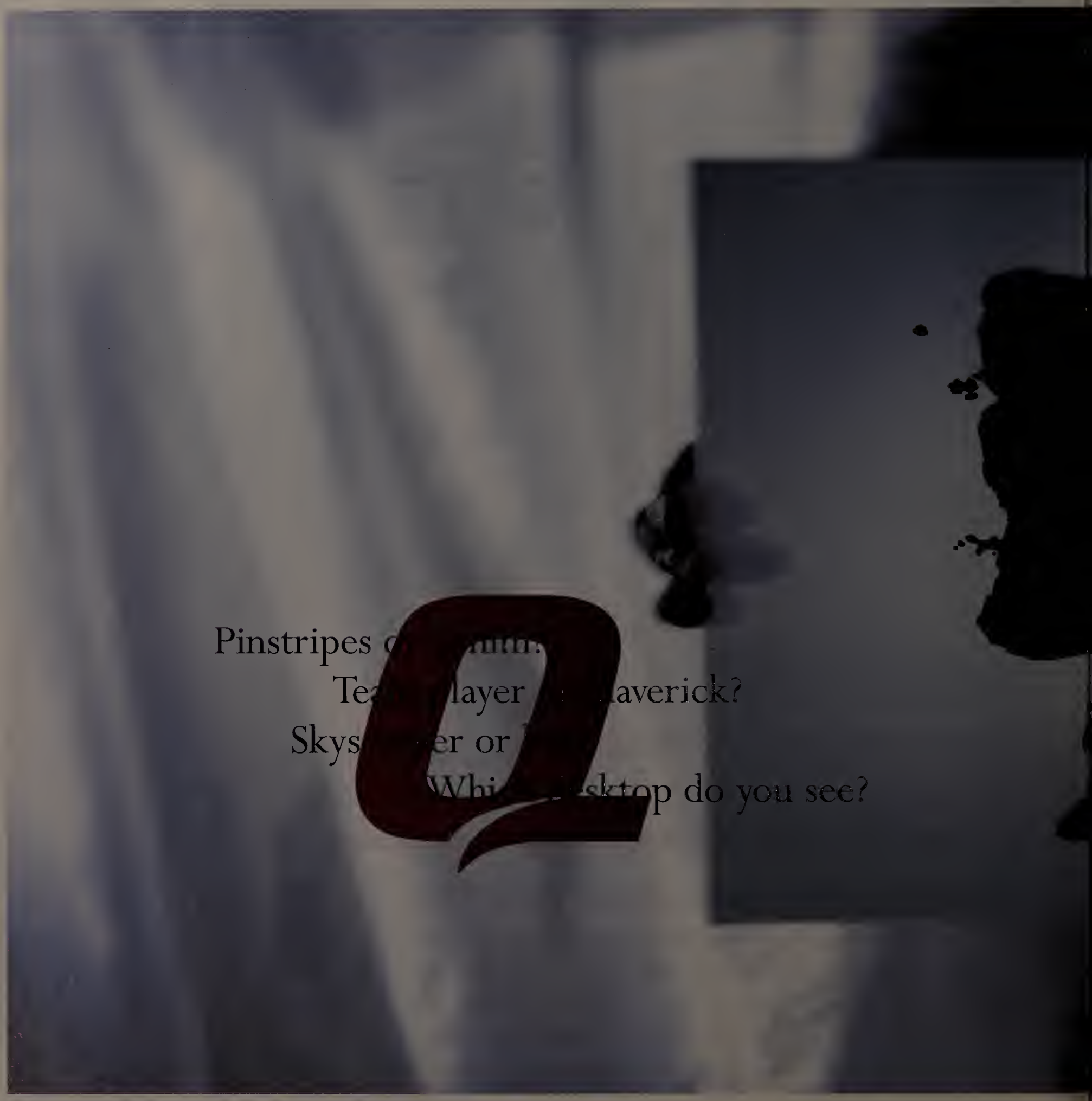

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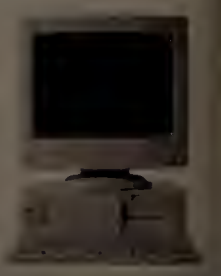

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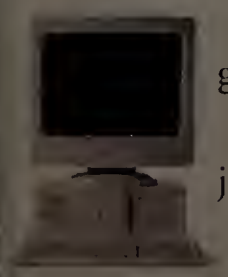

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Migration plans? Remember: Talk to end users up front

CONTINUED FROM PAGE 1

fast as their old mainframe-based E-mail — something they wish they had done in the first place.

"We forgot about the culture here," said Jason McLellan, team leader at Meijer Inc., a Grand Rapids, Mich.-based retailer. "People were used to E-mail on the mainframe. It never went down, and it was lightning fast, but its life span was over.

"We got the first users up [on the new E-mail system] and immediately heard about it — loudly," McLellan said.

End-user resistance is often the biggest challenge IT teams face when doing a major migration. Whether they're switching E-mail systems, operating systems or hardware, the biggest stumbling blocks generally aren't systems integration or budget battles, several users said.

Experienced technology managers say what's deadly is forgetting that end users might like their old systems and almost certainly are comfortable with them.

Experienced technology managers said what's deadly is forgetting that end users might like their old systems and almost certainly are comfortable with them.

Or forgetting to ask them what they like and what might need to be kept in the new system. Or dumping a whole new system in their laps with little or no training and then wondering why there's screaming and crying in the office.

HARD-TO-LEARN

This isn't a new phenomenon. It's an old lesson that is seemingly hard to learn.

"This has long happened and continues to happen," said Karen Boucher, a vice president at The Standish Group International Inc. in Dennis, Mass. "IS keeps forgetting that people's systems are very personal. If you have people who have been using their system for years and years and then you suddenly change it, don't be surprised if they don't want it to work and if they don't want to learn it."

For example, when Federal Express Corp saw how much of a hit a new scheduling system was with pilots at Trans World Airlines, Northwest Airlines and Air Canada, the overnight courier implemented a similar system from Montreal-based Ad Opt Technologies Inc.

But unlike the airlines, which took as long as a year to put their new systems in place and worked with their employees to see what they did and didn't want the system to include, FedEx tried to get its new system going quickly — possibly too quickly, according to Tom Ivaskiv, Ad Opt's CEO.

Three months after signing the contract with Ad Opt, FedEx began to use the new system to schedule pilots for complex strings of flights. Although the schedules fell within Federal Aviation Administration guidelines, they could be mind-numbing.

Pilots balked, and the new system's functions had to be throttled back.

In fact, trouble spots are still being ironed out five months after the scheduling system was implemented.

STRIKE COMING?

And the pilots' union may soon go on strike at least partly because of the way the system was forced on them (see story at right).

FedEx officials, in the middle of contract negotiations with their pilots, would say only that the union's concerns were being addressed.

Ed McDonald, chief IT architect at Texaco Inc. in Houston, said keeping the users in mind when making IT decisions is a lesson his team learns and relearns all the time.

"The technology is so cool," McDonald said. "Suddenly, you can do something that seemed impossible. We nerds get caught up in it and decide that surely everyone in the world will get excited about it, too."

Anthony Foster, vice president of information services at Canadian Pacific Railway in Calgary, Alberta, said he has learned that a good amount of end-user training prior to rollout is critical to help employees deal with any change. Foster's team is moving the company from a mainframe and Unix system to a wholesale client/server system.

"In early transitions, we probably didn't put enough focus on training," Foster said. "You have to have a well-thought-out plan for each user."

USER PARTICIPATION

Dan Horsey, vice president of IT at the Bureau of National Affairs Inc. (BNA), a $260 million publishing company in Washington, said keeping the end users involved from the very beginning and asking specific questions — without getting caught up in a quagmire of debate — is the key.

That's good advice that would have saved Horsey six months of wasted effort and up to $1 million in money misspent on an effort to replace his company's payroll system.

"We're starting over. The first attempt was a total abortion," said Horsey, whose company is moving from a straight mainframe system to a system based on Sun Microsystems Inc.'s Solaris.

BNA also is bringing in new general-ledger, purchasing and inventory applications.

"It's not that we didn't get the users involved. We didn't guide the process and ask the right questions," Horsey said.

This time, he said, IT staffers are meeting with user representatives from the beginning, asking specific questions, cutting off exaggerated debates and building a prototype that end users can try out.

"We're licking our wounds and we've learned our lesson," Horsey said. "It's important to go back and admit the mistakes you made and tell them why you have to start over again. They have to be willing to help you — again." □

Senior writer Stewart Deck and senior editor Jaikumar Vijayan contributed to this story.

SWEET TALK THOSE USERS

Why are users resistant?

- They fear new technology will decrease their job security
- They're comfortable with the old system
- They have had bad experiences with IT deliveries

How do you calm their fears?

- Offer training shortly before use — not weeks before
- Offer learning incentives
- Deliver the new system in bite-sized pieces so users aren't overwhelmed by an entirely new system at once
- Make sure business managers understand the changes so they can communicate them to others
- Involve users in decision-making

System implementation may contribute to pilots' strike at FedEx

There's some finger-pointing going on over the troublesome new pilot scheduling system at Federal Express. It's got FedEx pilots so riled up that it may be one of the issues that causes them to go on strike in the coming weeks.

The problem, however, isn't the software itself, which has been successfully installed at several airlines. Ad Opt Technologies, the company that built the system, isn't new to this scheduling game. Pilots at Trans World Airlines (TWA) love their Ad Opt self-scheduling system, and other airlines — including Delta Air Lines, Northwest Airlines, Belgium-based Sabena Airlines and Air Canada — also use Ad Opt systems [CW, Sept. 12].

So what went so wrong at FedEx? The difference, it seems, was the up-front planning process.

"The system was extremely disruptive, we weren't consulted before it was implemented and they said they'd run parallel tests on it before it went live — but they didn't," said Tony Hauserman, communications chairman at the 3,200-member Federal Express Pilots Association union.

Sally Davenport, a spokeswoman at FedEx, acknowledged that the system didn't "roll out the way we wanted it to," but added that the company is "addressing the problems the pilots feel need to be addressed."

Hauserman isn't so forgiving. The system's bizarre schedules have helped pull union members — in the midst of contract negotiations — closer together, he said.

Conversely, TWA tested its system for a year before it was turned on. "They had pilot union reps involved from the beginning and did parallel testing runs too," recalled Tom Ivaskiv, Ad Opt's CEO.

TWA's bidding system also builds its flight schedules from requests that the pilots send in themselves.

The FedEx system — a flight schedule optimizer — is different. It strings together the most efficient schedules it can to cover all the routes while getting pilots out of, and then eventually back into, their home bases.

The pilots were caught off guard because, as Bob Miller, president of the Independent Pilots Association union, explained, past contracts haven't been written with strict enough rules and guidelines about layovers, route preferences and time away from home.

"Contracts weren't written with this kind of optimization in mind, but they will be in the future," Miller said. "Negotiations between pilots and companies will become more complex" as a result of high-tech software capabilities. — Stewart Deck

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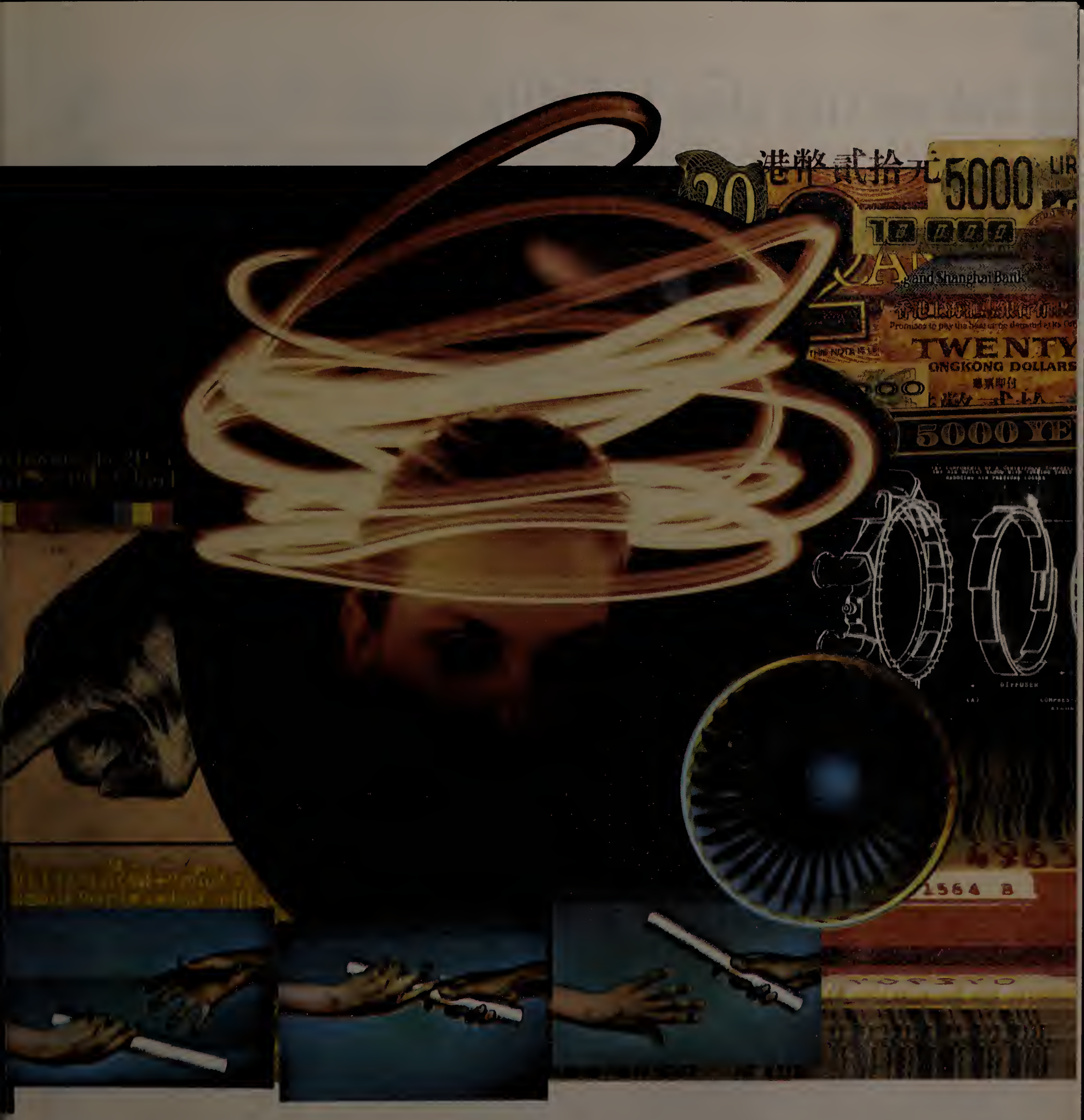

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Web service aims to battle spam

▸ *Marketers given a chance to prove self-regulation works*

By Roberta Fusaro

A NEW E-MAIL address-matching service may help stem the tide of unsolicited bulk E-mail, or spam. And if not, it should at least prove that self-regulation by the direct-marketing community won't stop the problem, observers said.

SafeEPS, an E-mail preference system, (*www.safeeps.com*) was introduced several weeks ago by marketer Rodney Joffe, a longtime spam fighter and a member of the Direct Marketing Association.

Individuals and/or Internet service providers register their E-mail preferences with SafeEPS, which will provide a database of E-mail addresses against which marketers will run their lists. Marketers will pay $29.95 per search, and that money will be held in a war chest to be used to sue spammers, Joffe said. Marketers then could clear their lists of addresses that have registered at the site as opting out of mailings.

Registration by Internet service providers and individuals at the SafeEPS site is available now. The site will open for marketers' list-matching Dec. 1.

As of last week, 737 individuals had added their addresses to the SafeEPS list, and almost that many were awaiting confirmation, according to Joffe. Also, 201 domains had confirmed their registration, and 146 were awaiting confirmation, he said.

If the project doesn't reduce bulk E-mail, antispam activists will have a clear-cut case that voluntary industry registration doesn't work and that more legislation in this area is needed, Joffe said.

SKEPTICISM

J. D. Falk, a spokesman for the Coalition Against Unsolicited Commercial E-mail (CAUCE), an online advocacy group based in Weed, Calif., said CAUCE has doubts about whether SafeEPS will work. "Opt-out lists have been used and tested by CAUCE members who have then gotten more mail than they started with," he said. "But Joffe has a pretty good history, and we would hope it works."

Officials at Hotmail Corp. in Sunnyvale, Calif., have registered with SafeEPS for domainwide opt-out. And other Internet service providers have indicated they will follow suit, Joffe said. Those who use the service providers' services would automatically stop receiving spam, but they could register individually at the SafeEPS database to receive certain types of commercial E-mail.

Randy Delucchi, director of customer services at The Microsoft Network/Hotmail, said the service considers spam one of its most serious issues and has adopted a zero-tolerance policy against spammers to protect members. "If marketers sign on to scrub their lists through SafeEPS, we will help reduce unwanted mail to our members," he said.

Marion Stevens Jr., a spam activist and owner of the Badgerlink Web site in Tuscaloosa, Ala., said he believes SafeEPS probably won't work. "Even if a group of reputable companies decides to use it, there are going to be thousands of fly-by-night outfits who won't. It simply isn't in their self-interest to do so," he said.

Instead, "[marketers] need to figure out a way to entice folks to subscribe to their mailing lists — not force them to jump through hoops to get off them," Stevens said. □

MOREONLINE

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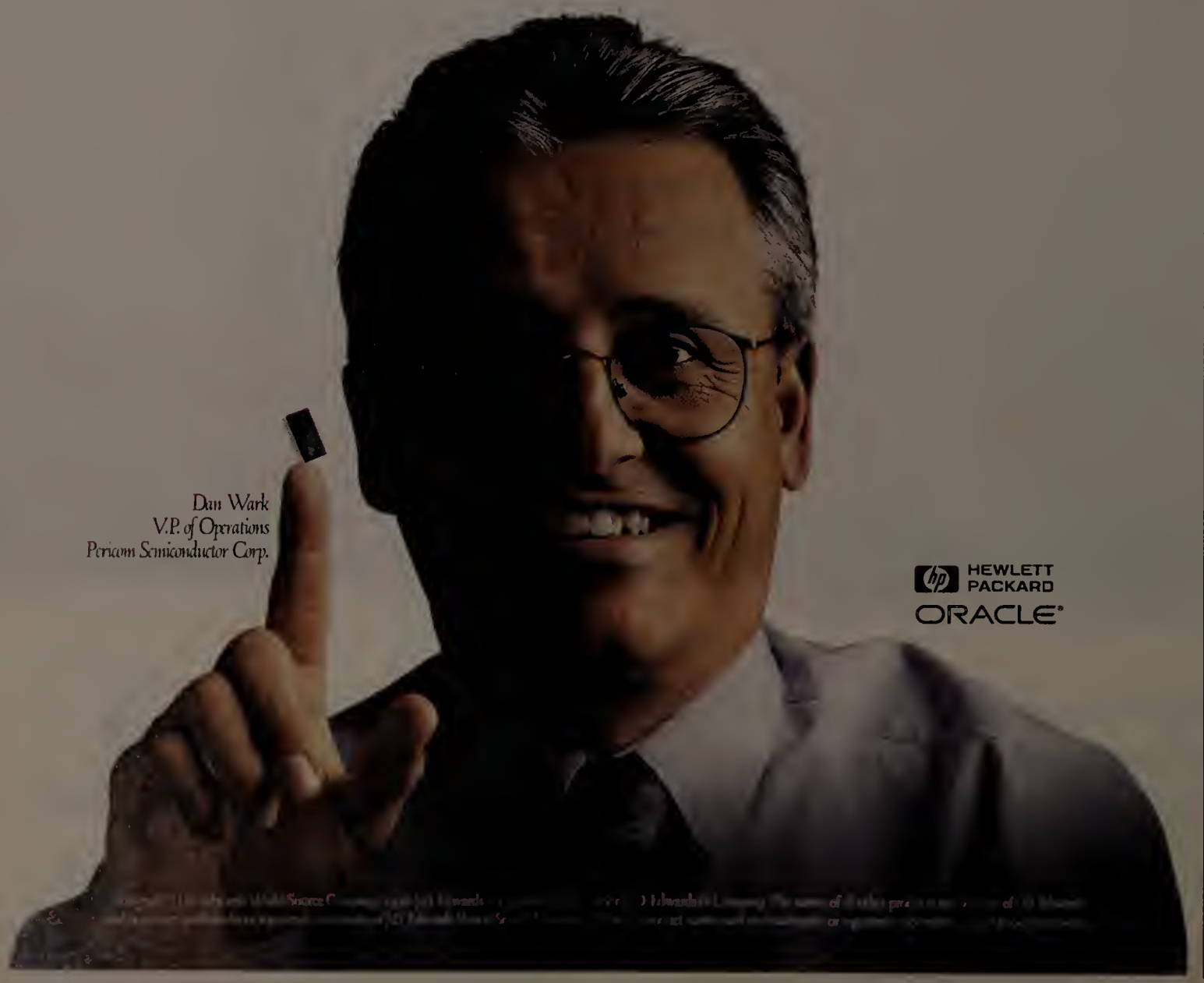

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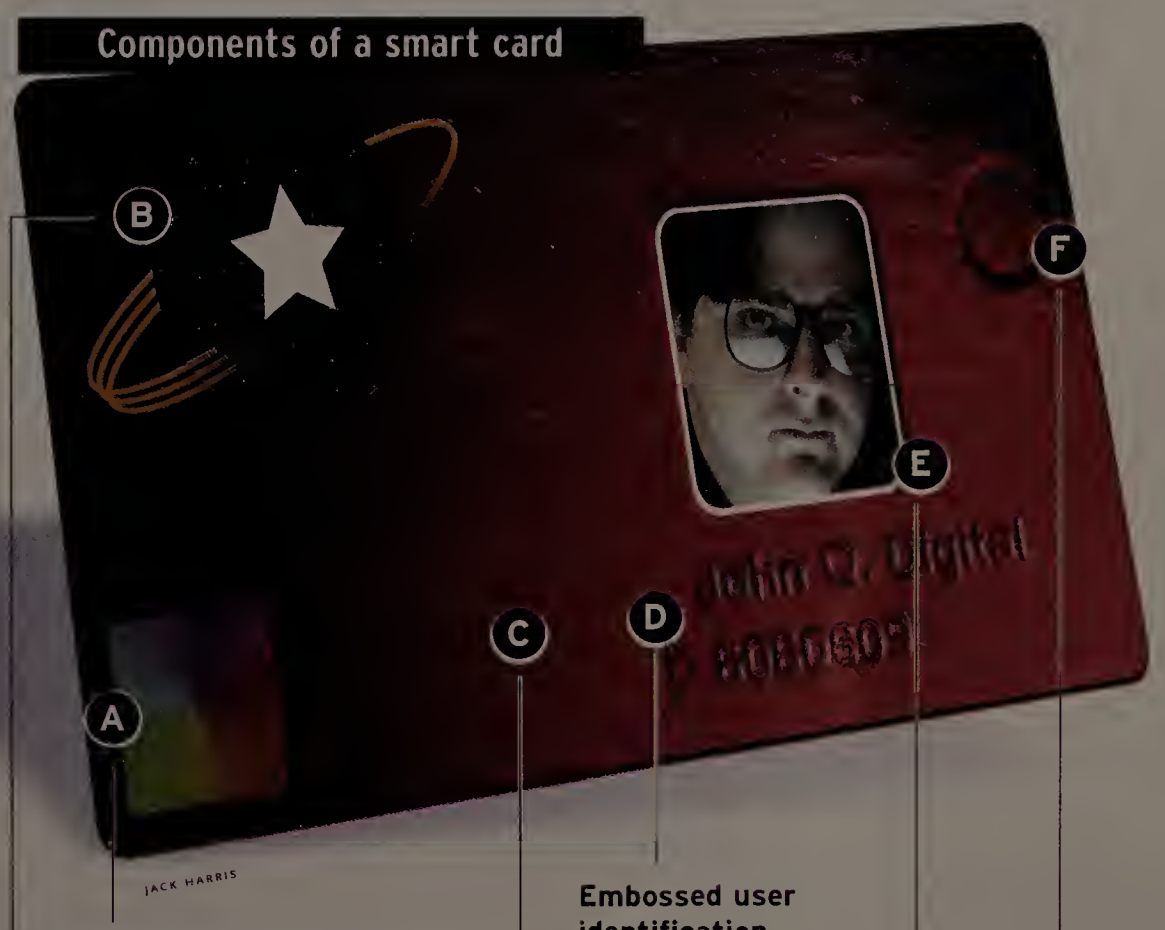
Smart cards

DEFINITION: The credit-card-sized smart card uses an embedded chip that, unlike a credit card, can be programmed to accept, store and send data. Most smart cards manage binary text and numeric data. Smart cards can store a dollar value, and the user can buy items at convenience stores or other retailers that accept the cards. The cards can store medical records or can be used to swipe through a card reader on a PC to purchase goods over the Internet. Another use is to pay for boarding trains and buses.

Components of a smart card



A Chip that can hold up to 100 times more information than the average magnetic strip; a compatible reader governs who – or which machines – can read or write card data

B Card issuer or cobrander's logo

C Plastic used for cards is typically 0.8 mm thick and can be embossed

D Embossed user identification data

E User photograph, another security measure

F Optional button to store and send audio data over phone lines to allow cards to be used with telephones, rather than special readers

Smart card test sites

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McDonaid's Corp. restaurants in Germany	Lets users pay for food
Rite Aid Corp. drug stores	Gives customers cards that track frequent-buyer points
Wells Fargo Bank, San Francisco	Lets employees buy goods from local merchants

Standards are the next frontier for smart cards

By Kim S. Nash

A CARD you can flip to a cashier to pay for a Snickers bar or slide through a reader at the emergency room to fetch medical records — or both — sounds pretty convenient.

But it won't be convenient for the IT professionals charged with making it happen. That's because standards are a mess. A smart card is about the size of a credit card and has an embedded chip. The chip is where the smarts are (see diagram). Special hardware is usually required to read the information stored on the card or to let the card draw data from other sources, such as a user's bank account.

AT ISSUE
Interoperability, hardware

"Interoperability has to get settled down," says Jules Street, an analyst at Killen & Associates Inc., a market research firm in Palo Alto, Calif.

The many competing formats aren't the only problem facing smart cards — hardware is also an issue. "There's only a certain amount of real estate available on a retailer's counter to put a reader. They will not put multiple readers out there," Street says.

One potential headache for smart cards is the issue of privacy. Medical records or other identity information stored on a card may cut paperwork, but information in the wrong hands could spoil individual privacy, says Robert Ellis Smith, editor of "Privacy Journal," a newsletter in Providence, R.I. It would be wise for IT managers to raise the issue with business managers and create a data protection policy to ease customer fears.

Yet analysts predict these problems won't stop the smart-card market from taking off. Dataquest, a market research company in San Jose, Calif., predicts that the number of smart cards sold will rocket to 3.4 billion in 2001, up from 544 million in 1995.

Several industry groups alternately cooperate and compete in setting standards, including the Smart Card Industry Association (SCIA), Smart Card Forum (SCF) and Global Chipcard Alliance (GCA).

They all have financial institutions among their members, but SCIA and SCF claim mostly vendors. The GCA is led by several telecommunications companies, such as US West Communication Group based in Denver.

The mission of each group is to spur the use of smart cards in the U.S.; Europe is much further along. But the groups haven't agreed on standards for card readers, networks, data security or data formats.

However, the three groups plan to meet next month to discuss ways to cooperate better, a GCA spokeswoman says.

So far, the big implementers of this technology are credit-card companies. Visa International Inc., for example, is overseeing three pilot programs that let users plug cards in to readers attached to PCs to make purchases over the Net. □

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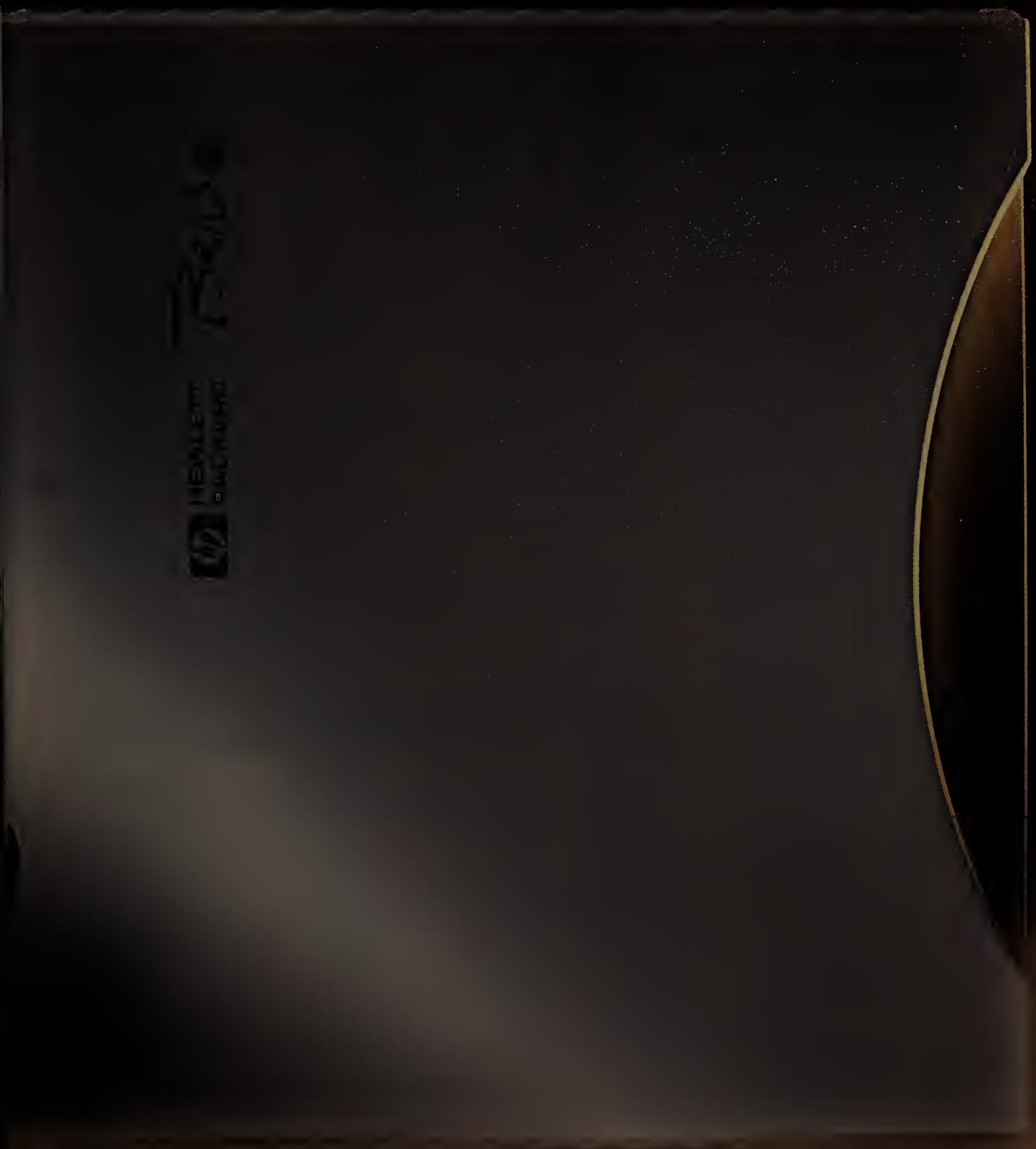

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Expanding Possibilities

OPINION

A worthy legacy

"Whatever happened to the network computer?" an IT manager asked me during an otherwise unremarkable luncheon at a recent computer conference. Everyone at the table suddenly stopped eating, forks in midair, waiting to hear a eulogy for the network computer.

Many of them had firsthand knowledge that the network computer — much ballyhooed last year — had flunked the business-value test at their companies. They'd evaluated the few offerings that trickled into the market and then took a pass on a technology that promised a lot more than it delivered. This was deja vu all over again for an industry where "it'll be so great when it gets here" is a cliched punch line.

But a funny thing happened on the way to the network computer's funeral. Something survived. Not the initial concept: That early notion of a simplified, diskless device that would run a Web browser and a few Java applications fared poorly in its assault on the PC desktop stronghold.

But the business demand that drove early interest in low-cost, zero-administration network computers — coupled with the meteoric rise of commercial interest in the Internet — actually did accomplish what the network computers boosters (myself included) had hoped would happen.

Internet computing emerged as the clear winner. The corporate world is decisively moving to increasingly powerful, network-based, distributed computing models where centralized servers deploy and manage applications that users access through Web browsers. Application servers and Web development tools rank among today's fastest-growing software categories.

PCs at the market's low end effectively morphed into network computers, with their prices dropping precipitously below $1,000. CEOs at all the major industry players are busy hawking a future in which many different mobile devices and "Internet appliances" will hook us into public and private internets.

What happened to the network computer? It never really got here, but it was great in its own way. It was a catalyst, a breakthrough idea, a galvanizing force of change on the complacent PC scene. All in all, not a bad legacy.

Maryfran Johnson, *executive editor*
Internet: *maryfran_johnson@cw.com*

LETTERS

Under the gun: Should employees carry firearms?

KEITH BLACK advises "effectively prohibiting guns ... in the workplace" ["Tips for Cultivating a violence-free IT staff," CW, Aug. 17]. But disarming an employee who has been threatened or stalked invites attack. Studies by University of Chicago professor John Lott conclude that mass public shootings are rarest where law-abiding citizens routinely carry guns.

Where criminals are less of a threat than gold-digging liability lawyers, concealed-carry laws put corporations in a bind. They are responsible for the acts of their employees, but stripping employees of their ability to defend themselves imposes an affirmative, and impossible, duty to guarantee their safety.

Disarming an employee who has been threatened or stalked invites attack.

The solution might be a carefully worded statement that any weapons found in the hands of employees will be reported to the police.

And liability might be reduced even further by making concealed-carry privileges conditional upon becoming a corporate security volunteer.

Any gun owner wishing to carry one at work would be required to take the same training as the uniformed security personnel, to agree to keep her weapon on her person at all times and to promise to protect colleagues should any madman start shooting up the office.

Chana Silbermann
New Orleans
js@eecs.tulane.edu

If you're going to let us in, let us work if we want to

I JUST WANT to comment on Alice LaPlante's article titled "Oh, Canada" [CW, Aug. 24].

My husband and I relocated to the United States almost three years ago. He was on a TN-1 visa, and our infant son and I were left without any legal status in this country.

Eventually, after my husband had been in the United States for 10 months, our son and I were granted TD, or "trade dependent," visas.

TD visa holders are not permitted employment in any form.

Yes, this means three years of forced unemployment with absolutely no light at the end of the tunnel.

I have a warning for Canadian families and U.S. companies considering employing Canadians on TN visas: Make sure you know what you're getting into. Unemployment is one thing; forced unemployment is another.

Companies have both a moral and ethical responsibility to these families, and they should do everything in their power to assist us, the spouses of your Canadian professionals, in our fight to receive work authorization in the United States.

Nicole Carlson
San Jose, Calif.
duckee@pacbell.net

Perm turned temp

I JUST FINISHED reading ["Reliance on temps creates new problems," CW, Aug. 31].

I worked for years as a salaried programmer, putting in 45 to 90 hours per week. It dawned on me one day, as I was listening to another permanent employee whine about some contractors, that perhaps we were the stupid ones. I became a temporary employee within a few months.

My most recent assignment lasted four years. During that time, a cadre of temporary employees and I watched a 100% turnover of "permanent" employees occur every one and a half to two years. The company tried to "hire" us as permanents, which would have required that we take a pay cut and work the same number of hours.

During those four years, the temporary employees showed dedication. We never whined or complained when we were told that something had to be done over the weekend. We gave value for the money, and we didn't quit when the stress level rose.

Rob Moore
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Computerworld welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

FROM THE EDITORS OF

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Intranets

A MONTHLY LOOK AT WEB DEVELOPMENTS BEHIND THE FIREWALL

AESTHETICS

Form Follows Function

Visual enticement ranks high for Web site design, but on an intranet, usefulness and usability reign over aesthetics

By Leslie Goff

The growth of the intranet at cable television programmer Home Box Office Inc. has followed a by now familiar route. After years of ad hoc development, a hodgepodge of company information and departmental applications has emerged, each the pride of its sponsor.

HBO's David Wolk: "...le see what is possible ... i...t, we see that we need an ...lla of direction."

INSIDE ▪ DELEGATING CONTROL, PAGE 2 ▪ PROJECT DANA CORP., PAGE 6

AESTHETICS

With nine key areas connecting users to benefits information, online training, interactive company cafeteria menus, the corporate health club, myriad line-of-business applications and more, the intranet has become more than just a communications vehicle: It's a window into the business that is evolving into an application-oriented rather than content-driven intranet.

Once users click off the home page, however, each section has its own look and feel. Different departments use differing meta-tag structures, for example, so the search engine doesn't fetch information consistently across the intranet. And the navigation aids, such as buttons and menu bars, vary from one section to the next.

WHAT'S ONLINE

To learn more about intranet design, point your browser to
www.computerworld.com/intranets

"We initially took a hands-off approach," says David Wolk, director of HBO's electronic publishing technologies group in New York. "But now, as more people see what is possible with the intranet, we see that we need an umbrella of direction."

The evolution has brought the electronic technologies group, which has central domain over the intranet, to a pivotal juncture. It must figure out how to superimpose a consistent look and feel across the organization without sacrificing the independent ownership of each major area.

The key to consistency, say intranet developers and managers, is a navigation scheme based on a single guiding principle: Form follows function. Visual enticement is a logical starting point for World Wide Web site design, but on an intranet, aesthetic sensibility plays second fiddle to usefulness and usability.

COMMON GROUND

A common navigation scheme imposes a framework for the aesthetic design of the intranet. Each section will have a consistent look and feel using the same buttons, bars and page layouts, for example. Once the navigation system is in place, designers can be clever, creating unique buttons, choosing fonts and colors and maybe even adding some graphics or photography here and there.

Granted, it doesn't sound eye-popping, and from a graphic designer's point of view, it isn't. As a rule of thumb, companies want to avoid using images or other aesthetic elements that will slow the intranet down, clutter the page or otherwise impede performance, intranet developers say.

"In the case of a traditional line-of-business intranet, the look isn't as important as how well it works," says Carlos Abreu, CEO and chief information officer at Cyberphilia, Inc., a New York-based intranet development firm. "Line-of-business applications are about finance, about accounting, about making money. They're not about impressing anyone. They are designed to work well, not to encumber the user."

For example, law firm Davis Polk & Wardwell embarked on its intranet in 1995 with a metaphor in mind: an electronic book. Because lawyers are accustomed to working with huge tomes, the intranet team put together a front-end table of contents and indexes of the legal documents and case law that were to be posted on the intranet. The metaphor worked because it was congruous with the way lawyers do their jobs, and it also provided a consistent look and feel across each of the firm's practices.

"The look and feel were driven by a functional design," says Michael Mills, director of professional services and systems at the law firm. "We were expecting to build a very large intranet, and we built a navigation scheme before we built an aesthetic."

Even in the image-conscious advertising business, good looks are less important than good sense in intranet design. New York-based Grey Advertising, Inc., a top 10 worldwide ad agency, worked with Cyberphilia to create a hybrid intranet/extranet that

Delegating Control

Intranet content posting is one of those information systems activities that requires a tricky combination of centralized control and end-user freedom: You want documents to maintain some consistency in layout, tone and coding, but you also want employees to feel like they own the intranet.

New York law firm Davis Polk & Wardwell and office supply vendor Staples, Inc. in Framingham, Mass., each have found a way to strike that delicate balance.

A law firm doesn't operate by directives – it's a partnership, notes Michael Mills, director of professional services and systems at Davis Polk. So Mills wanted to let users post their own content to the intranet, but he didn't want to delegate the HTML coding or encumber a webmaster with the task.

The firm joined forces with intranet software developer Netmatrix, Inc. in New York to create software that automatically reviews, modifies and posts documents submitted by users. Called Editor's Workbench, the software contains embedded cascading style sheets and templates that can be centrally customized for different types of documents. For example, the information technologies group's online tutorials, computer manuals and training material required a different look and feel than the legal documents posted by the firm's practice areas.

Mills also put a loose editorial staff in place. Each department in the firm has a liaison who reviews and submits

ER PHOTOGRAPH BY JOHN RAE

"LINE-OF-BUSINESS applications are about finance, about accounting, about making money. They're not about impressing anyone."

CARLOS ABREU, CYBERPHILIA

will be used by its account representatives, clients and other ad agencies. It will automate the constant exchange of information required for the complex process of scheduling and buying print and broadcast ads. Although it will serve internal and external users — including competitors — the intranet's design was driven by its purpose rather than artistic concerns.

"Aesthetics were important in the sense that we wanted to convey a consistent company look internally and externally," says Jack Jadick, Grey's vice president and director of media technologies. "It has to look like a professional product created by an ad agency. But branding isn't as important because the users are already our clients. The fundamental driver was really functionality and offering various ways of getting at the data."

Similarly, when Saab USA, Inc. in Norcross, Ga., set out to create a second, application-specific intranet to link its field sales representatives and franchised car dealerships with the home office, it came up with a navigation system that mimicked the flow of business as much as possible, says Jerry Rode, director of information technology. The result is about as different from Saab's public Web site, which is chock-full of video footage, photography and other graphical elements, as an intranet could be.

"The workflow within a dealership drove the design," Rode says. "We used minimal graphics because speed was of the essence. Since customers don't see it, it doesn't have to look pretty."

The intranet, set to go live at the end of this month, will replace a 10-year-old dial-in system. It will give dealers a direct line into the company for ordering parts, reviewing customers' service and warranty records, managing sales and lot inventory, administering financials and registering for training. Even though each application has distinctly different uses, the applications maintain a consistent look and feel.

For each application, the data a dealer would want to access is listed with buttons down the right-hand side of the screen. And options for the way they want the data presented is listed across the top on a menu bar. For example, in the Service and Warranty section, different types of warranties and service contracts are listed on the right; the menu bar across the top lets users get the data by customer number, vehicle identification number or start date.

Rode set up a dedicated team for each application, and the teams worked on their pieces concurrently. The warranty team was the first to arrive at a navigation solution, and it was chosen for all the applications. That laid the groundwork for a unified look and feel. Then, because each team used the same object-oriented development tools, they were able to exchange and reuse objects for Java applets and Lotus Domino routines to achieve a high level of conformity across each application, Rode notes.

The intranets at Saab, Grey and Davis Polk each revolve around a single piece of the overall business. Achieving consistency across different sections of an intranet becomes more complicated when it serves a diverse group of business users.

A common navigation scheme is still critical, but once off the home page, more diversity may be desirable, notes Ian Findlay, director of intranet applications at consulting firm Conduit Communciations, Inc. in Boston. "Elements of consistency are still important

Continued on page 6

content, and a managing editor who oversees the posting using the Netmatrix tools. Mills considers himself the publisher.

"We wanted people to have a very efficient viewing experience," he says. "We thought automating the process was better than letting each content group waste their time working on an aesthetic design when what they're really interested in is just posting the content."

James Ray, vice president of corporate systems and strategy development at Staples, describes his company's intranet as a backbone off which are many ribs. And the ribs — one for each individual business unit — can pretty much do as they please.

"Some are always under construction because nothing has been done with them, and others are a really active part of the operational environment," Ray says. "It's discretionary."

How it looks is also discretionary. While Staples' intranet adheres to some overall standards for look and feel, the ribs are allowed to pursue their own creativity. Some consistency emerges among them because users have undergone the same training, have the same tools and have borrowed ideas from each other. But any similarity is "more coincidental than conscious," Ray says.

When it comes to the actual content, though, Staples has a vigorously enforced publishing process. "We were concerned from Day One about unsanctioned publishing," Ray says. So authors must send their documents to a staging server, where a designated content reviewer must approve it before it is uploaded to a production server. Software developed in-house moves the whole process along.

— Leslie Goff

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AESTHETICS

Continued from page 3

so users don't get lost, but beyond that, you may find that look and feel are different in different sections," he says.

Aesthetics start to play a bigger role as you try to appeal to different user groups with different agendas. In a section of an intranet to be accessed mainly by executives and managers, for example, you may want the overall tone and appearance to be somber and serious, while sections aimed at staff may need to be more fun and lively.

"WE WERE MORE INTERESTED in the content than the format and appearance. But we also wanted to make it appealing so that associates will log on."

JAMES RAY, STAPLES

Visual excitement becomes especially important on intranets that are implemented mainly to communicate corporate information, such as the one at Staples, Inc., a Framingham, Mass.-based office supply vendor. While it has its share of interactive applications — such as Staples University, a training area and a conference room scheduler — the main purpose of the intranet is to relay information and drive home a corporate culture initiative to share knowledge and expertise across all levels of the company, says James Ray, vice president of corporate systems and strategy development. "We were more interested in the content than the format and appearance," Ray says.

Ray recruited Clinton Alvarez, a graphic designer from Staples' advertising department, to work on the visuals. Alvarez capitalized on the company's brand image, including its corporate logo and strong red and yellow color scheme, to create a virtual space that feels like an extension of the Staples workplace. Ray is enthusiastic about the outcome. "It looks as good as some people's public Web sites," he says.

At HBO, the electronic technologies group began initial discussions about imposing greater consistency in August. A lot of time, money and emotion have already been invested in the intranet, but with "more and more people contributing pages and sites, how to keep the intranet intuitive and aesthetically pleasing becomes an issue," says Joe Prieboy, manager of the electronic technologies group.

Wolk and Prieboy are tackling the consistency issue through the infrastructure, coming up with standards for HTML usage, meta tags, and document layout and design at the homepage level and second-tier pages. But, Wolk explains, "we won't have — or wish to have — much control over third- and fourth-level pages," which contain the local content specific to each department. Next, the electronic technologies group, working with user liaisons from each department, will set Java application development, distribution and modification standards.

And while both the applications and the content are driven by function rather than form, given that HBO is in a visual business and has a strong marketplace image, it can't ignore the need for an engaging, creative design.

"A high aesthetic standard is part and parcel with professionalism around here," Prieboy says. "We wouldn't serve anyone if we had the correct content but it looked half-baked."

Goff is a freelance writer in New York.

PROJECT: DANA CORP.

Majority rules: Dana doesn't dictate design

By Steve Alexander

After overhauling its World Wide Web site with a new corporate look, Dana Corp. in Toledo, Ohio, decided to bring some consistency to its diverse intranet — despite a corporate culture that decentralizes authority.

The automotive parts supply company has set up a cross-functional committee to create technical standards and aesthetic guidelines for Dana Vision, its intranet. A consistent look and feel of Dana Vision are considered key to sharing information in the 79,000-employee company, in which less than half of the workers have intranet access.

Pat Long, manager of communications technology, explains the plan.

WHAT THEY'RE DOING

The problem with the intranet, which we launched in February 1996, is that everybody often is doing his or her own thing. We have 270 facilities in 33 countries, and each division or department is responsible for its own intra-

net pages. A lot of pages are out there that I'm not even aware of; I find out about more of them every day.

That kind of autonomy is good, but it makes things hard when you want to share information with other parts of the company. So we need to create some intranet standards to make information easily accessible to everyone.

We want employees to share information on the intranet in a consistent way. Our web lead group, which represents areas such as information systems, finance, sales, marketing, communications, product areas, government operations, investor relations and legal, is working on reaching a consensus on what we want the intranet's consistent look and feel to be.

DANA CORP.'S PAT LONG: "Setting up guidelines is the best way to describe what we're doing with the intranet."

WHY THEY'RE DOING IT

We haven't pushed or marketed the intranet within the company — it just happened. Now we're working to make people aware that it's out there and what process to follow for putting information on it.

Some people like technology for technology's sake. If things spin or flash, they put them all on one web page. But then your eyeball doesn't know where to go. That's the biggest problem from a design and content perspective: There are too many things happening. Where am I supposed to look, where am I supposed to focus first?

HOW THEY'RE DOING IT

Setting up guidelines is the best way to describe what we're doing with the intranet. We cannot say it must be this way; instead, we suggest to people that they should do it a certain way. You can't use the word standardization, which is a dirty word at Dana. Our style is decentralized, and people do not have to do what corporate says.

I think we'll hand out web page templates, and I figure most people will use them. We have a couple of templates from our work on the Dana Internet site that rely only on HTML code. Our template for the home page has navigation bars on the left and across the top and information on the rest of the page.

We also have a template for pages that are the next level down; it has the Dana Diamond logo and a red line across it. In addition, we agree that people can use pull-down menus written in Java on their intranet pages if their group has PC software that can read those menus.

Each group within the company will own that group's intranet content and be responsible for maintaining it.

TECHNICAL CHALLENGES

Our problem has been the older computers we have and our limited network bandwidth connections to them. In our earlier revision of Dana Vision, we used pull-down menus with Java, but most people's PCs couldn't read Java. As a result, people couldn't navigate. Some machines still can't read Java.

TOOLS

Microsoft Corp.'s Front Page is the best tool we've found for our people to put Web pages up. We try to get people to use it.

COSTS

We don't have a good estimate of the cost. If you have templates for intranet pages, then the cost will be minimal. Initially, the biggest chunk of the cost will come from the time people spend on the intranet project. Then we'll hire an outside design firm as we did when we redesigned our Internet home page.

RETURN ON INVESTMENT

Nobody has asked us for a return on investment number because bringing consistency to the intranet is considered to be good for the company. We're just to do it for the least amount of money we possibly can and use the best tools we can to make it happen.

WHAT'S ONLINE

For an expanded view of this project with RealAudio clips, point your browser to
www.computerworld.com/intranets

ADVICE TO OTHERS

It's hard to redesign an intranet by consensus. But if you're working in a decentralized company, you need to put together a cross-functional team that represents the different groups in the company.

Alexander is a freelance writer in Edina, Minn.

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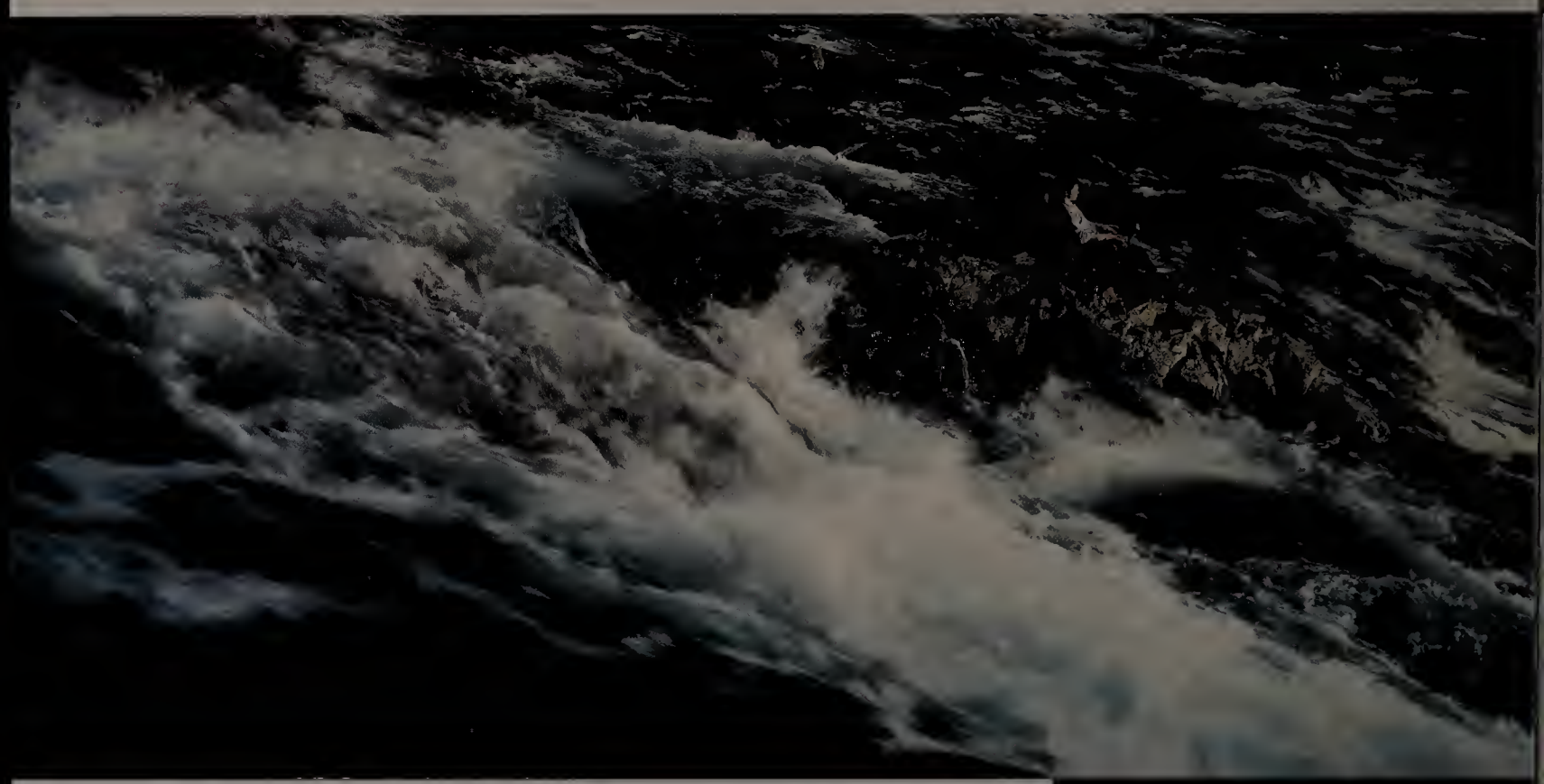
PHOTOGRAPH BY NEIL SGETT

Isolation is not an option.



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Post-year 2000 career opportunities

Michael Cohn

I am a year 2000 project manager, and I'm worried. I'm busting my butt. I work like the dickens. I am remediating and charting and partitioning and date-warping and testing till the cows come home.

But still I ask myself one simple question: Is there a job for me when this is over? What will become of me *after* 2000?

There are thousands of project managers.

There are hundreds of thousands of Cobol, RPG and assembler language programmers slinging code and windowing dates.

Two years from now, who will have us? Will anyone want the grizzly veterans of year 2000?

All is not lost. We *will* have jobs when all is said and done.

But the hard truth is, many of us will have to look outside of information technology. If you're thinking about where to send the old resume, your year 2000 project management qualifies you for a slew of positions, including the following:

You say you aren't qualified to be a lawyer? Were you qualified to be a project manager?

■ **Waiter**. Face it, it's just like being a year 2000 project manager. Except to get the full effect, you need about 40 tables, all with customers screaming that their stuffed potato skins are cold, while you spend most of your time in the kitchen desperately trying to convince the chef that no, this is not a hoax, there really are people out there.

■ **Dentist**. This millennium thing is just like being a dentist. Everything hurts like hell. You aren't sure how long it will take. There are all kinds of expensive tools and gadgets; you just cross your fingers and hope they work. I bet a year 2000 project manager would be perfectly suited for this. Wait, did I say *dentist*? I meant dental *patient*.

■ **Lawyer**. You know you're in trouble when there aren't enough lawyers. But after 2000, everybody will be suing everybody. They'll need prosecutors. They'll need defenders. They'll need those guys who get to hold out the Bible while witnesses swear to tell the truth, the whole truth and all that stuff. You say you aren't qualified to be a lawyer? Well, were you qualified to be a project manager?

■ **Pilot**. Perfect job. You'll take long journeys at breakneck speed. You will lead hundreds of people. They won't be able to see you, but they will know you're there. They will depend on you. Your slightest mistake will spell catastrophe. And best of all, you get to wear a cool hat.

■ **Blacksmith**. Ideal job for first quarter 2000, because there will probably be no gas, no traffic lights — and my pickup won't turn over for some mysterious, unfixable reason (not unlike the way it works today, come to think of it).

■ **Pro wrestling referee**. Control two, four or occasionally several dozen combatants, all of whom make *way* more than you. Settle disputes, pound on the mat and get hit over the head with a metal folding chair (which actually happened to me once during a steering committee meeting).

■ **Department store Santa**. The perfect post-millennium job for the struggling year 2000 victim. Thousands of people sit on you. They tell you what they want. You laugh and smile but you know, deep down, that there's no chance in hell they're going to get it.

■ **Bartender**. There's no shame in dispensing a good stiff drink. By January 2000, we're all going to need one. □

Cohn is an Atlanta-based consultant who looks forward to folding sweaters at The Gap.

The Web gets personal

John Gantz

In Internet circles today, there may be no hotter topic than "personalization." The term refers to customizing the experience your customers have as they visit your Web site.

You need to worry about this because the more people interact with your company online, the more their perception of your company relies on factors beyond product quality, sales professionalism and all the other things that used to go into building customer loyalty.

You may have *great* products, but if your Web site is crude or slow, your customers' experience will suffer. How many burgers would McDonald's sell in a year if the floors of every outlet were dirty, the staff didn't know the menu or service was always slow?

Personalization is letting software do what a human being on a sales call once did. And it can work. According to research done last spring by my employer, International Data Corp. (IDC), a sister company to *Computerworld*, and Relevant Knowledge, a company that measures Internet audiences, users with personalized pages at Yahoo and Excite tend to visit the sites three times as often as the average user. Anecdotal information is beginning to pile up that Web site personalization helps build customer loyalty.

Unfortunately, we're stumbling into personalization without much guidance. There are some bellwether sites — Dell's customer-specific home pages or Amazon.com, for example — and there is some much-talked-about technology. But there is no established body of knowledge on how and when to personalize Web sites. There are no grizzled veterans to tell us how it should be done. Everyone's still experimenting.

At a workshop at IDC's recent Internet Executive Forum, participants determined that present personalization efforts are rudimentary. To bring the average site up to the next level of personalization will take more than customizing page views based on known demographics, forms that are filled out once and simple click-through tracking. It will take real-time or contextual profiling along with some measure of user control or customization of that profiling.

The coin of this new realm is trust. Users must believe that the time they spend helping Web sites profile them will pay off in better service. They must believe their personal information will be protected. And they must believe the relationship with your company is worthwhile to begin with.

The latest Web site goal turns application development topsy-turvy.

The need to personalize customers' online experiences with information technology turns application development topsy-turvy. For years, IT professionals have bemoaned the lack of user commitment to cross-functional application development teams. Product engineers and marketers had trouble making the time for meetings on requirements or functional specs.

Now the shoe is on the other foot. If companies are to sell products that are marketed, advertised, bought and serviced over the Web, it is exactly those engineers and marketers who will require IT professionals in their meetings. Will we be there when they need us?

I see this every day in my own line of work. We can't develop any new information products — next-generation market studies, in our case — without worrying about things such as the performance of the Web site that delivers our content. And we don't have enough IT professionals to go around. What I learned at the Internet Executive Forum is that those worries also apply to companies that sell hard goods and information services. □

Gantz is senior vice president at IDC in Framingham, Mass. His Internet address is jgantz@idcresearch.com.

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Death-spiral fears for traditional banks?

Don Tapscott

Propelled by technology, banking is transforming itself at a pace and scale that have no precedent. In predictable, Darwinian fashion, those banks that refuse to adapt and exploit the Net will likely enter a death spiral from which there is no escape.

That grim scenario was mapped out by Bank of Montreal Chief Technology Officer Lloyd Darlington in *Blueprint to the Digital Economy*. What used to happen only in bank branches (and only during "banker's hours"), now can happen anywhere at anytime — and through just about any delivery channel a customer cares to select: the automated teller machine, telephone, personal computer, even television.

Internet cherry pickers target the most lucrative parts of the business.

Start-up costs for a Web-based bank are low compared with those for a traditional, bricks-and-mortar bank. The cost of setting up a full-service retail bank Web site is about the same as opening a single new branch (less real estate costs): around $1 million. However, that Web site would be available to the 80 million North Americans who have Internet access. To reach that customer base through traditional branches would cost more than $1 billion. The appeal of being a Web-based bank grows even stronger when you consider the demographics of Internet households. They are younger, more affluent and better-educated than the average consumer, maintain a much higher bank balance, produce a much higher demand for financial products and services and are more receptive to cross-selling. Research shows that the digital-banking crowd is much more likely to switch financial institutions — or at least give it serious thought.

No wonder: Internet customers have instant access to hundreds of reputable financial institutions from around the world, each of them making offers they hope their competitors' customers won't be able to refuse. The Internet enables a completely redefined financial services industry, a fact not lost on the rising tide of "cherry pickers" who are setting up shop on the Web and attempting to pluck the most lucrative parts of the banking business. The cherry pickers pose a threat to banks of all sizes for a simple reason: Unlike traditional full-service banks, they need not be all things to all people. They don't have to offer a standard package of products and services, and they don't have to maintain a costly bricks-and-mortar branch system. All they have to do is set up their site and begin to peddle their wares — or, in many cases, their ware.

If cherry pickers are successful in luring away large numbers of Internet customers with higher interest rates on deposits and lower interest rates on loans, coupled with lower or nonexistent user fees, then the landscape for traditional banks will become an increasingly bleak one. As described in a Booz Allen & Hamilton report on Internet banking, that's where the death spiral may kick in.

With its high-profit customers lost to cherry pickers, the traditional bank still must support its infrastructure. Most of the remaining customers will be the heaviest users of the most expensive distribution channel: bank branches. If the bank then tries to raise its fees or reduce its services, more customers will leave and the cost of providing service will rise once again. Once the death spiral has started, it can be very difficult to stop. □

Tapscott is chairman of the Alliance for Converging Technologies and a best-selling author of business books. His most recent book is a collection of articles by business visionaries called Blueprint to the Digital Economy *(McGraw-Hill, 1998).*

Antitrust trial's unspoken consequence

David Moschella

By the time you read this, U.S. Department of Justice vs. Microsoft will have finally begun. While the lawyers battle to prove what Microsoft has or hasn't done, the rest of us would be wise to stay focused on a more practical question:

If no action is taken, how much more of the software business will Microsoft eventually take over?

I've identified 10 key software markets Microsoft hopes to conquer, beginning with client issues and moving up through servers. To me, there is now little doubt: The future looks even scarier than the past. Barring competitive revitalization or meaningful government intervention, here's where we're headed:

1. Web browsers: Microsoft and Netscape are now pretty much even in market share, but Microsoft definitely has the momentum. Not using Internet Explorer as a default browser is just becoming too inconvenient for those of us who also use a lot of other Microsoft software. **Advantage:** Microsoft.

2. E-Mail clients: Largely because they are often bundled for free, Microsoft's Outlook and Outlook Express are steadily gaining ground with consumers, work-at-homers and others. Meanwhile, Netscape, Eudora and Lotus have stalled. **Advantage:** Microsoft.

3. Non-PC operating systems: Whether the market is handhelds, cable boxes or WebTV, Windows CE is pretty much everywhere. In contrast, Microsoft's competitors are small, scattered — and often aren't software companies at all. **Advantage:** Microsoft.

4. Streaming media: RealNetworks currently dominates the Internet audio/video business, and that company's recent deals with America Online, Lotus and Intel should help solidify its position. **Advantage:** RealNetworks.

5. Enterprise messaging: According to International Data Corp., a sister company to *Computerworld*, Microsoft has passed Lotus in new seat licenses, but Lotus maintains an installed-base edge. **Advantage:** Call it even for now, but Microsoft has the momentum.

6. Directory services: The delays in Windows NT 5.0 have given Novell a few years of precious breathing room, although serious industry enthusiasm for that vendor's NDS remains conspicuously absent. **Advantage:** Novell in the short term, Microsoft over the long haul.

7. Web server software: All that stands between Microsoft and market leadership is the shareware called Apache. Who would you bet on? **Advantage:** Microsoft.

If no action is taken, how much more of the business will Microsoft take over?

8. Database management: Oracle is feeling pricing pressure from Microsoft, but it still dominates the Unix segment. Microsoft wins most of the NT database licenses, although in dollar terms, it and Oracle are pretty even. **Advantage:** Call it a draw.

9. Server operating systems: This one is similar to the database situation, except that the NT server market is much more strategic than the high-end Unix business. **Advantage:** Microsoft.

10. Programming languages: Java is the only serious Microsoft challenger here, which is why the suit with Sun really does matter. **Advantage:** It goes to whoever wins the case and its aftermath.

By my count, the score over the long haul is Microsoft 6, non-Microsoft 1 — with 3 too close to call. Some of these future victories might not be as complete as Redmond's other near-monopolies, but the overall message is clear: There's still a lot of competition in the software industry, but the situation is getting more precarious by the day. The DOJ has a great deal to think about. So do we all. □

Moschella is an author, independent consultant and weekly columnist for Computerworld. *His Internet address is dmoschella@earthlink.net.*

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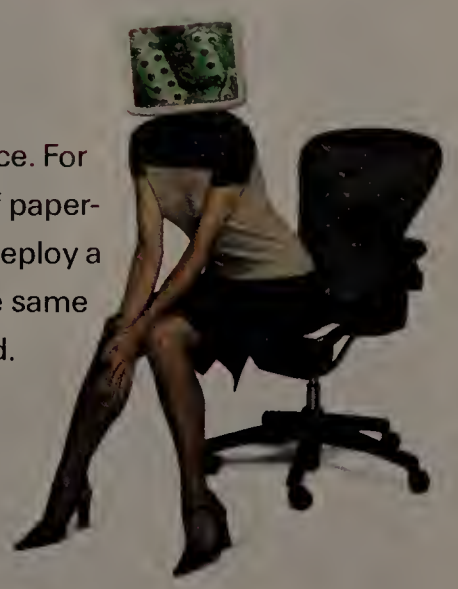

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Corporate Strategies

Briefs

High-tech diversity

President Clinton signed into law on Oct. 16 a bill that creates a commission on the advancement of women and minorities in science, engineering and technology. Introduced by U.S. Rep. Connie Morella (R-Md.), the bill was designed to prompt study into ways to ensure that women, minorities and people with disabilities have the skills needed to compete, Morella said.

Quicken financials

The Principal Financial Group in Des Moines, Iowa, claims to be the first company to offer variable and fixed annuities information to consumers through Intuit Inc.'s Quicken InsureMarket Web service (*www.insuremarket.com*).

Compare investments

State Street Corp. in Boston has introduced State Street Universe, a Web-based service that lets investment plan sponsors compare their investment results with similar portfolios on a monthly basis. It is expected to include 160 plans representing more than 5,000 portfolios when it becomes available in early 1999.

Why companies outsource

Base: 250 managers who attended the World Outsourcing Summit

Source: Michael F. Corbett & Associates Ltd., Poughkeepsie, N.Y.

MARC BERLOW

Tribune Co. CTO Jeff Scherb (at bat) and Tribune Information Services celebrated the once-unresponsive group's turnaround with a softball game at Wrigley Field. Below, Scherb gets a soaking

Tribune turns IT group into winners

▸ *New management gets team's skills in shape*

By Julia King
CHICAGO

TURNAROUND STRATEGIES

JACK FULLER, former executive editor of the *Chicago Tribune*, remembers vividly the night he rushed back to the newsroom from a local jazz club with 20 minutes to write his review of a new horn player's performance. Fuller hit his midnight deadline. But then, something horrible happened. His computer began to eat his words, "paragraph by paragraph, from the bottom up," Fuller recalled.

He called Tribune Information Services' (TIS) help desk. In hindsight, he said, he probably would have had better luck calling the Internal Revenue Service.

"I was the No. 2 person in the editorial department, and the TIS help desk person treated me like they probably treated everybody else, which was to blame me and say they couldn't do anything," said Fuller, now the *Tribune*'s publishing president.

Luis Lewin, vice president of human resources at Tribune Co., knew the same drill. As a result, he had stopped calling the help desk altogether. So had everyone else in his group.

The kick in the pants was that they still had to pay for the service because TIS used to allocate its costs equally across all business departments.

That was two years ago. Today, both executives, plus several other users, tell a different story. They describe the 120-person revamped TIS as "innovative," "responsive" and even "caring."

But the group's turnaround, which it celebrated earlier this month with a softball outing at Chicago's Wrigley Field, was neither pretty nor painless. Among other things, it involved bringing in an all-new information technology management team — headed by Tribune Co. Chief Technology Officer Jeff

Tribune, page 40

MARC BERLOW

Third try a charm for music retailer warehouse

By Stewart Deck

LAST DECEMBER, Camelot Music Inc. discovered what appeared to be a curious purchasing trend: The music retailer's 493 stores were selling a lot of rap and alternative CDs to people older than 65.

"We figured those folks weren't suddenly into Snoop Doggie Dogg or Pearl Jam," chuckled Bob Roberts, director of new business development at North Canton, Ohio-based Camelot. Instead, "They were buying Christmas presents for their grandkids."

So Camelot pulled customer data from a data warehouse into a data mart to develop a campaign that targeted grandparents during the holidays.

It sent them lists of rap and alternative CDs that didn't carry parental advisory stickers. The campaign worked. Sales for the targeted group were 37% higher than a control group of 65-year-olds who didn't receive the mailing.

Camelot pulled customer data from a warehouse into a data mart to develop a campaign that targeted grandparents during the holidays.

Camelot targets customers using its Repeat Performer system. Data for the system comes from customers who receive a discount card in return for filling out a six-line application. When they have reached certain purchasing levels, Camelot mails them a $5 coupon.

This is Camelot's third attempt at getting a system that fits its needs. The first was too small; the second too expensive and slow. Camelot hopes this one is just right.

Eight years ago, the Repeat Performer system was more ba-

Music retailer, page 41

Tribune

CONTINUED FROM PAGE 39

Scherb — and replacing half the staff in two years.

"A lot of people left with the change in management because they saw it wasn't going to be status quo," said Pat Miller, a senior analyst and E-mail administrator.

The first thing Scherb did was to create what he calls a federal/state structure for TIS, which at the time had a hand in virtually all the systems used by Tribune Co.'s 18 TV channels, four radio stations, four newspapers and various education businesses.

The problem was that TIS knew next to nothing about the systems or their users and had no overall strategic technology vision for the company as a whole, according to Fuller.

So under the new regime, business-specific applications, such as the individual newspapers' circulation systems, were handed off to IT groups at those businesses. TIS, meanwhile, assumed responsibility for all IT infrastructure, including networks and data center operations, plus corporate systems, such as payroll, used by all Tribune businesses.

To help hone the company's IT strategy, Scherb also set up an advanced technologies group to handle leading-edge projects that managers had been farming out to high-priced consultants instead of entrusting to the old TIS group.

"In 1996, the last thing anyone in the company would think of is going to TIS for help building a Web site," Scherb said. The result was that each business unit paid consultants separately for application and site development, often duplicating their efforts and wasting money. "There was no central repository of information or skills," Scherb said.

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FIRST HIT

Headed by Sharon Mandell, the advanced group's first success was a Web-based arts and entertainment service, known as Metromix, that now serves Chicago-area consumers. But Scherb kept it quiet that it was a TIS-affiliated group that had built the application. "At first, we didn't admit they were part of TIS because we didn't want people to immediately think badly about them," he said.

"If there's an earthquake in California, KTLA [a Tribune-owned TV channel in Los Angeles] can feed footage to the *Chicago Tribune*, which can do a video grab and run a photograph in the newspaper," said Tom Eastwood, CIO at the *Tribune*.

To improve user support, TIS adopted very specific monthly performance goals, such as increasing the number of help desk calls each month that are resolved on the first call. Two years ago, only 13% were resolved with one call; today, the number is 50%.

It also gave managers the financial support they needed to attain service goals. "When I said I needed equipment to do a job or get a certain result, I got it," Miller said.

For example, Miller said, she had no problem getting the OK to buy more PC servers to handle the burgeoning volume of incoming E-mail and paging traffic. Before, "we wouldn't get new equipment. TIS would have responded by stalling or doing an analysis," she said.

TIS also changed the bonuses to reward managers who hit goals for user satisfaction and service rather than for staying within budget.

User departments also are on a different payment plan. Now, departments such as human resources pay only for the percentage of total services that they use rather than also paying a portion of unallocated information technology costs.

Additionally, TIS has developed a new training program to help the company's human resources employees recruit and hire qualified IT professionals.

"It used to be slow and tedious and could take weeks. But now, with people in HR trained, we make offers on the spot at job fairs," Lewin said.

Last but not least, there's been a "sea change" in the level of user support, according to Fuller.

"Problems like E-mail that used to be category-A ulcer creators have been problems that get solved," he said. □

Music retailer

CONTINUED FROM PAGE 39

sic. Clerks stamped a customer's cardboard card after every purchase and encouraged them to return.

That drew people into the store, but it didn't tell the company what they bought once they got there, said Charles Marsh, Camelot's CIO.

"We tried outsourcing this [function] in 1995 and it worked fine, but it was ridiculously expensive," Marsh said, declining to name the outsourcer. "We had only two promotions going out each month to 100,000 names, and it was costing us almost $40,000 per month. So we decided we needed to manage [the system] ourselves."

U.K.-based ICL PLC helped the company set up a $2 million data warehouse and a data mart for customer relationship marketing.

Data gathering also helps identify the most effective store designs, which products to place prominently and even which ads and signs are most effective.

An Informix Corp. database houses the data, which Camelot accesses using warehouse access tools from MicroStrategy Inc. Transaction-level sales figures and individual card-holder data are fed each night from all of Camelot's stores into the warehouse through an ICL product called Corema.

Data gathering also helps identify the most effective store designs, which products to place prominently and even which ads and signs are most effective.

Well-executed data warehousing can help low-margin retailers by keeping them from wasting marketing campaign money on customers unlikely to buy the product, said Ted Schadler, an analyst at Forrester Research Inc. in Cambridge, Mass.

"Our biggest challenge is separating the gigabytes of simply interesting information from what we can actually use . . . to increase the profitability per customer," Roberts said.

And the music chain has learned that some paths can lead to a dead end — such as targeting 17- to 23-year-olds, Marsh said.

"They love to carry around a card, but they're independent and moving so quickly through their tastes. By the time we can figure out what they're buying and target a new release to fit that profile, they're onto something else," he said.

On the other hand, Garth Brooks fans will buy anything the country music singer sells. "It didn't help to target market them," Marsh said. "Garth Brooks fans were going to buy his new album anyway, if we direct-marketed them or not." □

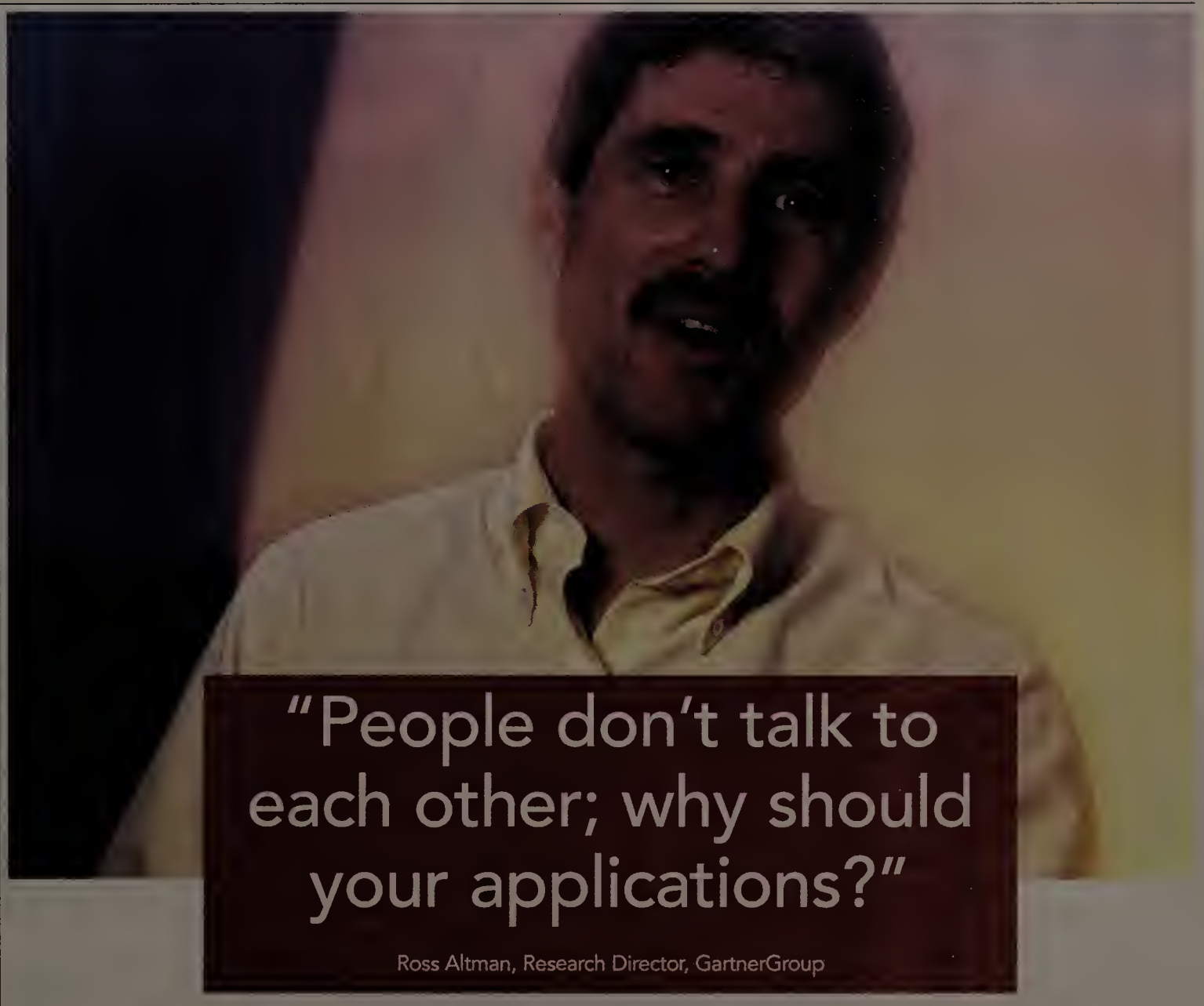
SHORTS

Banking 2000

The Global 2000 Coordinating Group, a group of 180 banks, securities firms and insurance companies, has released a template designed as a standard way for banks to release assessments of their year 2000 programs. The information will be posted on the firms' Web sites and linked to the Global 2000 site at *www.global2k.com*. The information is intended to reassure the international financial community of banks' year 2000 preparedness as well as help the banks reduce the number of information requests they receive.

Retailer uses Lawson

Dayton Hudson Corp., the parent company of Target Stores, Mervyn's and other retail chains, is installing Lawson Software's Lawson Insight to run its core financial operations. Dayton Hudson will run the software on Sun Microsystems Inc. Enterprise 4000 and 6000 servers running Sun's Solaris operating system.



"Because when off-the-shelf applications can't interact with other packaged applications or legacy applications, you've got a major problem." says Altman.

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Internet Commerce

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Briefs

Domino bug found

Lotus Development Corp. in Cambridge, Mass., is working on a fix for a security vulnerability in some Web applications based on its Domino server. The hole appears in portions of a Web site used for processing registration and payment information. A user who removes everything to the right of the database name in the uniform resource locator can access sensitive information by clicking on the link, according to bug finder Lopht Industries in Boston. That typically includes business and customer names, addresses, phone numbers and payment information.

More free E-mail

Snap, a Web search and navigation service offered as a joint venture between NBC and CNET, has launched email.com, a free Web-based E-mail service.

Security scanner

Netect Inc. in Framingham, Mass., is shipping an antihacker product that automatically scans servers, firewalls and other IP-based devices for security holes. Andrew Luca, client service manager at PricewaterhouseCoopers in Boston, said HackerShield for Windows NT is easier to use than other antihacker products, adding that it automatically updates itself to scan for new security problems.

TRAVEL BOOM

Projected revenue from online bookings in the travel industry:

	1998	2003
Airlines	$1.6B	$10.6B
Hotels	$1.1B	$10B
Tour packages	$175M	$4.8B
Car rentals	$175M	$4.8B

Source: Forrester Research Inc., Cambridge, Mass.

Site redesigns keep it simple ...

By Sharon Machlis

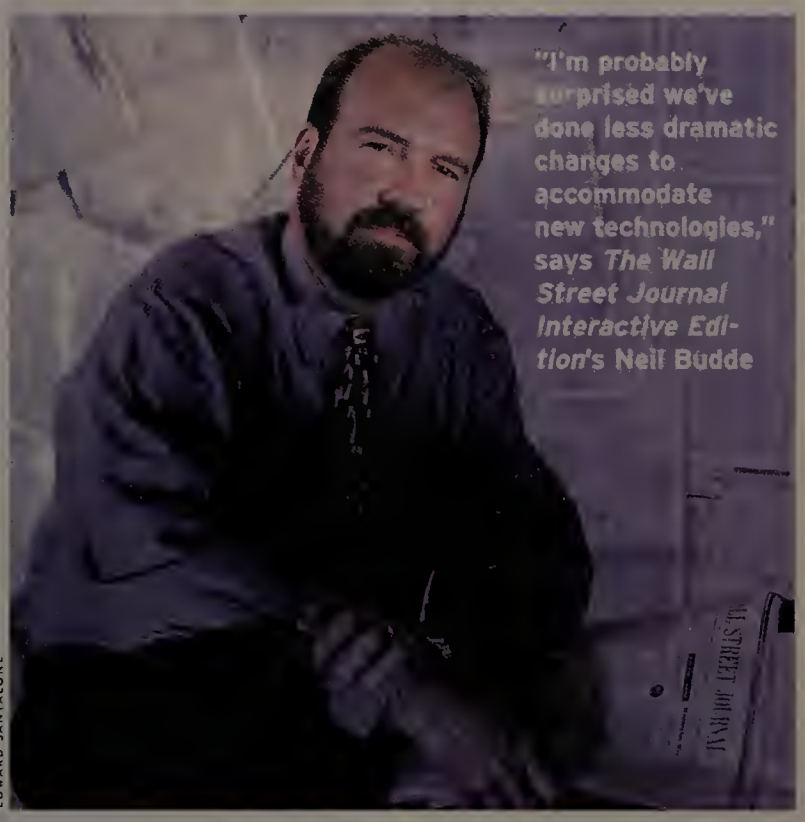
AT FIRST GLANCE, the Web hardly seems like a meat-and-potatoes kind of environment.

But many Web site redesigns are forgoing jazzy new technologies that dazzle users. Instead, information technology executives say they're concentrating on some of the basics of good salesmanship: Give the customers more of the information they're seeking, and make it easier to find.

"The technology running CDnow is over 3 years old," said Michael Krupit, vice president of technology and creative services at Jenkintown, Pa.-based CDnow Inc., the leading online music store. "We have no frames, no JavaScript. . . . We keep our site very straightforward."

Navigation is of crucial importance as sites continue to add new features, products and information. After T. Rowe Price Investment Services Inc. overhauled its Web site with Siegel & Gale Inc. in New York

Redesigning sites, page 44



EDWARD SANTALONE

"I'm probably surprised we've done less dramatic changes to accommodate new technologies," says *The Wall Street Journal Interactive Edition*'s Neil Budde

... and don't do it too often

By Sharon Machlis

TO REDESIGN or not to redesign?

That's a question executives at every Web site must wrestle with as Internet trends race forward. On one hand, they want to make major improvements; on the other hand, they know many people dislike relearning sites they've grown comfortable using.

The key, executives say, is striking a balance between offering improvements and not constantly jarring customers.

Charles Schwab & Co.'s Web site has undergone significant changes every six months or so since its early-1996 launch. Executives first roll out major changes to small customer groups. If those customers are unhappy with some new navigation feature, Schwab can redo it before thousands complain.

"You can only do so much with focus groups," said Vincent Phillips, vice president of Web systems and electronic brokerage technology at Schwab in San Francisco. "When we first launch a feature, we'll beta-test it."

CDnow Inc. in Jenkintown, Pa., takes a gradual, evolutionary approach. "The site today is extremely different than [a year ago]," said Michael Krupit, vice president of technology and creative services. "[But] we don't do rebuilds ever. You might say we rebuild things daily.

Don't do it, page 44

CDnow tweaks its site continually rather than redesigning it all at once

XML high on user, vendor priority list

By Carol Sliwa

HORDES OF people are lining up at shows and conferences to learn more about how Extensible Markup Language (XML) can help them tag and better categorize information so users can access and search for it more easily. And even as most people are still trying to figure out where to use basic XML, some vendors are busy trying to extend XML's capabilities.

The more limited Web programming language, HTML, has a fixed number of tags that deal only with structure and presentation of documents. XML can tag data with useful classifications, grouping many products in a catalog under the category "pen."

Microsoft Corp., which has been out in front in the XML movement, earlier this month at its Professional Developers Conference demonstrated new XML extensions that it plans to support in its upcoming Inter-

XML, page 44

Italians urge telecom site attack

By Philip Willan
ROME

ITALIAN CYBERNAUTS last week launched an Internet protest against plans by Telecom Italia SpA to increase the cost of local phone calls, organizers of the protest said.

The government is expected to reduce Telecom Italia's tariffs for long-distance and international calls while increasing the cost of local calls, a move Internet users fear will sharply increase the cost of surfing the Net. The new tariffs will increase phone bills for the average family by between 4% and 6%, organizers of the protest said in a statement carried on their Web site.

The site (*http://notut.ml.org*) invited Internet users to access Telecom Italia's Web site and download information, thus blocking access to the site for other users. The initiative gained publicity on the front page of the Milan-based *Corriere della Sera*, Italy's biggest-selling newspaper.

"There is a pool of different organizations and individuals who support the initiative," said

Italian attack, page 44

Don't do it too often

CONTINUED FROM 43

. . . It's very costly to take a team of 10 people, sequester them [for several months] and rebuild the site." But depending on how a site evolves and how many new tasks it performs, some Web executives say major revamps are unavoidable.

Federal Express Corp.'s site has had several redesigns since its November 1994 launch, the most recent in February. "We added so many things [to the old site], the redesign was inevitable. Things weren't laid out very well," said Susan Goeldner, manager of Internet development at the Memphis-based shipping company. The revamp features a new look and feel, improved navigation and more options for international customers. "If you have a growing site . . . at some point it ends up looking like the mansion with 14 extra bedrooms [added on]," said Mike Janes, vice president of logistics and electronic-commerce marketing at the company.

TESTING, TESTING

FedEx conducted two weeks of intense testing before the revamped site went live; among other things, colleagues in Europe and Asia checked features and links for various country pages. One strange glitch arose, Janes recalled: A tester would find a bug and report it, but after the information technology team would fix the problem, the tester would still see the same bug.

The Web team finally traced the problem to the caching done by some Internet and online services. To speed up response times, some services store versions of popular Web pages on their own servers, and those pages may not be updated instantaneously. So even though the reported bug had been fixed, testers were still seeing the older, cached version stored by their Internet service provider. □

Redesigning sites

CONTINUED FROM PAGE 43

last month, customers praised the Baltimore investment firm for all the new information on the site.

But "there's not a lot of additional content on the site," said Emmett Higdon, Internet marketing manager. "It's easier to find."

Surveys show the first and second waves of Web investments were to improve usability and customer transactions, said Peter Raulerson, a partner at ParaMarketing Group in Seattle. This year, many sites are increasing their focus on integrating Web front ends with back-end systems. "We're just seeing the beginning of that," he said. "That's the next big wave."

That integration will allow features such as better personalization — by serving up customized information according to user preferences — and better inventory management — by immediately linking a customer's order to stock on hand.

Last month, during the first week of CDnow's customizable site, My CDnow, 22,000 people signed up for the gift registry alone. Personalization enthusiasts predict that practices such as displaying new CDs based on a user's stated preferences will entice shoppers to keep returning to a site.

"People can handle a lot of information, provided it's what they're looking for," said Darryl Gehly, vice president of TVisions Inc., a Cambridge, Mass., Web consultant and outsourcer.

The software electronic-commerce site Cyberian Outpost Inc. plans an early-1999 site launch with greater personalized shopping, as well as more closely integrated front- and back-end processing. And *The Wall Street Journal*'s Web edition also is working on more customization and personalization that would allow pages to be created on demand based on a combination of editors' judgments of story importance and users' stated preferences.

"I'm probably surprised we've done less dramatic changes to accommodate new technologies" such as the latest browser features, said Neil Budde, vice president and editor of *The Wall Street Journal Interactive Edition*, considered the most successful fee-based subscription news site. "I thought we'd be more pressed to add new bells and whistles." □

WEB EVOLUTION

What's the year's 'must-have' feature?

1996 Usability features: Improved navigation and streamlined look

1997 Transactions: Allowing customers to make purchases and look up account information

1998 Front-end/back-end integration: Connecting Web to legacy data or new databases

1999 Real-time, interactive capabilities: Providing updated text, forum for dialogue with customer-service representatives

Source: The ParaMarketing Group, Seattle

XML high on priority list

CONTINUED FROM PAGE 43

net Explorer 5.0 browser and Windows operating system. They include the following:

- Extensible Style Language (XSL), a set of rules for transforming an XML document into another XML document that better suits the needs of the user and describes how to display the XML data. For instance, a document may have XML tags for author, content and subject, but an end user may want another document to include only the author and content data. XSL would let that transformation happen and describe how the data will be displayed, such as alphabetically or in a table. XSL is a working draft before the World Wide Web Consortium (W3C).
- Namespaces in XML, a mechanism that lets someone reuse an XML tag without risking a name clash. Namespaces will address the problem of identical uniform resource locators in the same way a seven-digit telephone number can be reused because it has an area code preceding the number. Namespaces is nearing the end of the W3C's working draft phase.
- Document Object Model Level 1, which defines an interface that lets users access parts of an HTML or XML document. DOM Level 1 became a W3C recommendation Oct. 1.

Although no shipping browsers fully support XML, many companies are starting to use XML to tag information in databases. They can store the data in the XML format and write a program to transform the data into HTML for display in browsers. Otherwise, they can wait for the major browsers to get up to speed or rely on the preliminary support in Microsoft's Internet Explorer 4.0.

Merrill Lynch & Co., for instance, is taking advantage of Internet Explorer's early XML support in designing Web applications. The financial consulting firm's private client architecture group is adding XML tags to research reports, news items and other information used by its managers, financial consultants and customers. Merrill Lynch needs to be able to display the information differently, with varying degrees of detail, for its various end users in a wide range of countries.

"XML will give financial consultants the ability to access and manipulate information more efficiently and flexibly," said Ben Meiry, director of Merrill Lynch's private client architecture group. "We expect that this is going to save the company a lot of money in reduced development time, system maintenance and network traffic.

"We can use the mainframes as servers and store and retrieve very large amounts of data in a smaller number of transactions," Meiry added. □

Italian attack

CONTINUED FROM PAGE 43

Vincenzo Donvito, chairman of Florence-based Association for the Rights of Users and Consumers. "We are backing it, and we have two computers in our office that are in constant contact with the Telecom Italia site."

Donvito said he didn't know how successful the denial of service attack was but added that the technical aspect was secondary.

"What's important is the media coverage and the fact that people are talking about this. Of late, the press in Italy has only mentioned the Internet in connection with crime," he said.

The organizers, whose site contains several E-mail addresses but no names, said their objective is the abolition of the Timed Urban Tariff (TUT), which bills all calls on a per-minute basis. "It is better to pay a fixed (but moderate) fee," their statement said.

Subscription to an Internet service in Italy costs about 300,000 lire ($185) per year, but the average user spends more than 1 million lire per year on phone calls, said Roberto Cicciomessere, director of Agora, a Rome-based Internet service provider. That sum is likely to deter many less well-off people from using the Net, he said.

About 2.5 million Italians currently have access to the Internet, according to recent research.

Telecom Italia responded to the criticism by pointing out that its tariffs were set by the Communications Ministry and that the cost of a one-hour local telephone call between 6:30 p.m. and 8 p.m. is cheaper in Italy than the equivalent call in France, Spain, Germany or the U.K.

PROVIDER RESPONSE

Internet service providers alternately approved of the publicity the protest generated or were concerned about its objective.

Abolishing the TUT would be a mistake that would lead to the complete collapse of the Net in Italy, according to Giovanni Prignano, chairman of Flashnet, a Rome-based Internet service provider. "There would be nothing to prevent people from remaining online from dawn to dusk," he said.

Marco Barbuti, CEO of ISP Italia Online and chairman of the Association of Italian Internet Providers, shared Prignano's skepticism. "The realistic solution is to keep TUT low and grant discounts to Internet users," he said.

But of the protest, he said, "This is a novelty in Italy and, in principle, I think it is something positive." □

Willan writes for the IDG News Service in Rome.

WHAT EXACTLY
IS IBM'S

POSITION

ON WINDOWS NT SERVERS?

IBM®

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intel inside

pentium® II xeon™ PROCESSOR

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e-business means a lot of things. It means moving business to the Web. It means improving relationships with customers, suppliers and employees — boosting communication and efficiency both inside and outside an organization. It means looking at data in new and meaningful ways.

e-business also means looking at PC networks in new and significant ways. And it's probably not much of a surprise to hear that Windows NT® has become one of the most popular new operating systems in the corporate world.

FACT

In 1997, use of The Windows NT Server operating system grew by 139% worldwide, reaching a 34% share of all server operating systems (source: IDC).

What you may not know is that IBM is building Intel®-based servers with the power to run the major business applications — from companies like SAP, Baan, JD Edwards, Oracle and QAD — used in the largest of corporate networks.

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The Netfinity 7000 M10 server, for example, is powered by the new Intel Pentium® II Xeon™ processor 400 MHz, providing it with some of the highest performance benchmarks in its class. (Visit www.pc.ibm.com/us/techlink/srvperf for details.)

History, plain and simple, also separates Netfinity servers from all others. IBM has been building mission-critical systems for the corporate world for decades, and now we've applied that expertise to the world of Windows NT. Netfinity servers are the first to offer scalable parallel technology with a clustered system and hot-plug PCI implementation. Netfinity servers also offer scalability features you don't expect in a server running Windows NT — like the ability to hot-swap hard disk drives, adapters, power supplies, and more — without taking your network down. Netfinity servers are also quick and easy to integrate into your existing IT infrastructure, whether it's powered by IBM (thank you) or not.

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The real explosion of Windows NT servers has been at the departmental level — starting with desktop computers and then connecting those desktops into larger networks, enterprise servers and legacy systems.

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FACT

A server is a repository of information, information that quickly becomes powerful business intelligence when fully exploited. This is e-business. Knowing more about customers, what they need and want. Mining growth out of details. Uncovering new markets (and margins) from within.

All these people connected via Windows NT servers also need access to the detailed information that resides on the more powerful systems that are the core components of a major enterprise (like, say, an IBM RS/6000 SP UNIX® server capable of processing millions of transactions a second). In such a world, the ability to quickly and seamlessly integrate departmental Windows NT servers into your larger IT infrastructure is critical.

Netfinity servers, like the new Netfinity 5500 M10, help simplify this integration. Take, for example, IBM Netfinity Manager software. It ships with every IBM Netfinity server. It's platform agnostic. It lets you manage clients and servers from dozens of leading manufacturers. It also helps you tie your Windows NT network into enterprisewide management software such as Tivoli® Enterprise,™ Microsoft® SMS™ and Intel LANDesk.™

This is what e-business is all about — not just building powerful servers for departmental use (and make no mistake, the Netfinity 5500 M10 can handle everything from huge e-mail networks to 24/7 Web commerce), but also providing tools to integrate and manage those servers as part of a much larger network. This helps you control costs and keep your network up and running.
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intel inside
pentium II

*Netfinity 7000 M10 performance configured with four Intel processors and running Microsoft Windows NT compared to next best competitor results on SPECweb96 benchmark as of July 17, 1998. Server configuration and test environment may vary. †Estimated reseller price to end users for model 8680RU (Netfinity 7000 M10). Bay configuration and test environment may vary. †Estimated reseller price to end users for model 8680RU (Netfinity 7000 M10). 8476I6U (Netfinity 5500 M10), 8476I6U (Netfinity 3000). All include IBM 4.5GB hard disk drive. Certain features described are available for an additional charge. Network operating system not included. Actual reseller prices may vary. MHz denotes microprocessor internal clock speed only; other factors may also affect application performance. For terms and conditions or copies of IBM's standard Limited Warranty, call 1 800 772-2227 in the U.S. Limited Warranty Service in those countries where this product is sold by IBM or IBM Business Partners (registration required). IBM product names are trademarks of International Business Machines Corporation. Microsoft, Windows and Windows NT are trademarks of Microsoft Corporation. Lotus, Domino and Domino Intranet Starter Pack are trademarks of Lotus Development Corporation. Intel, the Intel Inside logo and Pentium are registered trademarks and Pentium II Xeon is a trademark of Intel Corporation. Other company product and service names may be trademarks or registered trademarks of others. © 1998 IBM Corp. All rights reserved.

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But what if you're not a large business yet — or even a medium-sized business? What if the sales department doubles as the marketing department? What if corporate HQ is your desk? And your bedroom back at home seems more like a 24-hour branch office than a place to sleep?

Well, IBM is making servers for growing businesses with all their growth still to come. That means prices you can afford right now on a server that runs Windows NT: the basic Netfinity 3000 server (complete with an Intel Pentium II processor, speeding along at 450 MHz), for example, starts at just $2,365.†

That's a very affordable server — but not a stripped one. Like all Netfinity servers, the Netfinity 3000 comes standard with Lotus® Domino™ or Lotus Domino Intranet Starter Pack,™ not to mention Netfinity Manager software.

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Every Netfinity server includes a 3-year limited warranty and 90-day Start Up Support. Leasing plans, automatic 2-year product refreshes, customizable support, system installation and integration are available, if you desire, through our SystemXtra program.

FACT

Of course, the value, quality and reliability of the Netfinity 3000 server is such that a whole bunch of not-so-small businesses will choose them by the dozens for things like print spooling and file management. Not the most glamorous tasks, but the day-in, day-out, got-to-be-dependable side of e-business.

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Briefs

Two-way cable modem subscribers in North America

*Projected

Source: Kinetic Strategies Inc., Roanoke, Va.

Insurer automates

The Business Men's Assurance Company of America, a manufacturer and distributor of life insurance under the BMA brand name, last week said it will use imaging and workflow products from Billerica, Mass.-based Eastman Software Inc. to automate the issuance, underwriting, enrollment, claims and renewal processes of its group insurance. The software will help the Kansas City, Mo., insurer link 13 U.S. branch offices and efficiently manage product information, BMA officials said in a statement.

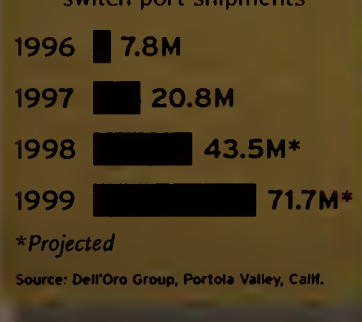
Banyan earnings down

Banyan Systems Inc. in Westboro, Mass., last week announced a slight revenue increase for the third quarter ended Sept. 30. The software maker said revenue rose to $18.9 million this past quarter compared with $18.8 million in the third quarter last year.

The company reported net income of $681,000 for this period compared with net income of $769,000 in the same period last year.

ETHERNET EXPLOSION

Worldwide Ethernet switch port shipments



*Projected

Source: Dell'Oro Group, Portola Valley, Calif.

Virtual network boosts service

▸ *Pizza chain streamlines order process*

By Bob Wallace

IMPLEMENTING A virtual private network (VPN) is helping regional pizza chain Mazzio's Corp. improve customer service while saving dough.

The company, which operates in 14 states, also discovered that using a VPN let it streamline its ordering and delivery process and close two expensive call centers.

CALL CENTER TECHNOLOGY

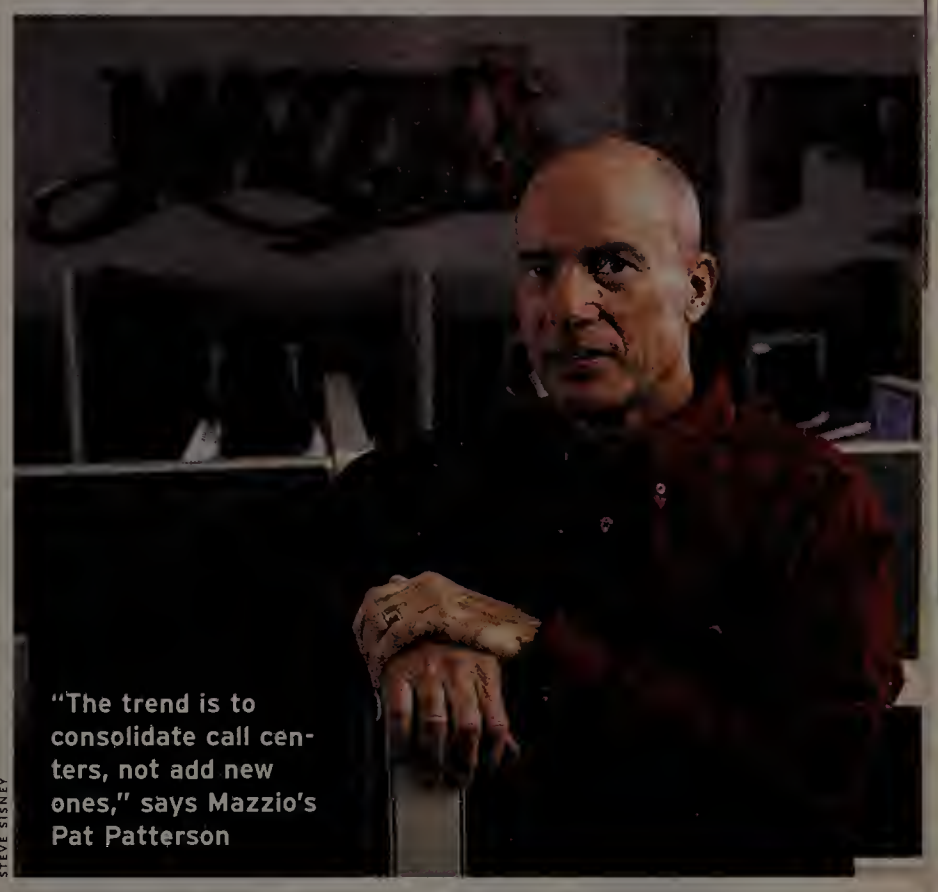
Because it's based on the Internet, the VPN lets Mazzio's affordably extend the reach of its private network to sites that couldn't justify dedicated wide-area network connections.

"We wanted to provide better customer service by tying the stores to our main call centers, where there are agents trained to take orders, as opposed to having the pizza maker or delivery person take calls," said Pat Patterson, vice president of information systems at the Tulsa, Okla.-based chain.

Mazzio's is headed in the right direction, according to one expert. "Being able to effectively and efficiently handle takeout orders is a critical success factor for chain restaurants," said Ron Paul, an analyst at Technomic, a restaurant and food services industry consultancy in Chicago. That's because all the growth in the competitive industry is in takeout business, he added.

Half of Mazzio's restaurant revenue comes from takeout pizza business, Patterson said. The VPN improves service for those hungry callers who order for pickup, not just those who order for delivery. "It allows you to take better care of customers in the restaurant because employees aren't tied up taking calls," said Irv Youngberg, area manager at Mazzio's in Springfield, Mo. "You can also provide the product quicker with savings in labor."

There's another benefit to **Virtual net,** page 50



STEVE SISNEY

"The trend is to consolidate call centers, not add new ones," says Mazzio's Pat Patterson

Legal-document system upgrade saves time

DAN BRYANT

Jack Vaughan (left) and Mark Horak say the move to NT helped make Fulbright & Jaworski more efficient

▸ *Docs Open package keeps bills competitive*

By Cynthia Bournellis

TO MAINTAIN its competitive position with other law firms, Fulbright & Jaworski LLP felt it had no choice but to invest more than $5 million to overhaul its DOS-based environment to Windows so its employees could work more efficiently.

Not making the investment means "you are either less profitable, or you have to charge your clients more," said Jack Vaughan, an administrative partner at Fulbright, a Houston law firm that does $265 million per year in business.

At Fulbright, technology investments are made incrementally. "That way, we don't find ourselves in the position of needing to raise rates strictly to cover some large expenditure," said Mark Horak, manager of

System upgrade, page 50

INTERNATIONAL

AT&T working on instant translation

By Clare Haney
HONG KONG

IMAGINE YOU'RE LOST in a Chinese city, and you don't speak Chinese. How are you going to find your way and communicate with the locals who don't speak English?

AT&T Labs, in conjunction with a Chinese institute, is working on technology that would let English and Chinese speakers communicate directly and precisely with each other in their respective languages via mobile phones.

MULTIPLE TECHNOLOGIES

The use of translation, speech-recognition and speech-synthesis technologies, together with software algorithms, would enable each party to hear a real-time translation of what the other person had said via his or her mobile phone, AT&T said in a statement issued last week.

For example, a foreign tourist visiting China could communicate in English with Chinese-speaking taxi drivers, shop

Translation, page 52

Virtual net boosts service

CONTINUED FROM PAGE 49

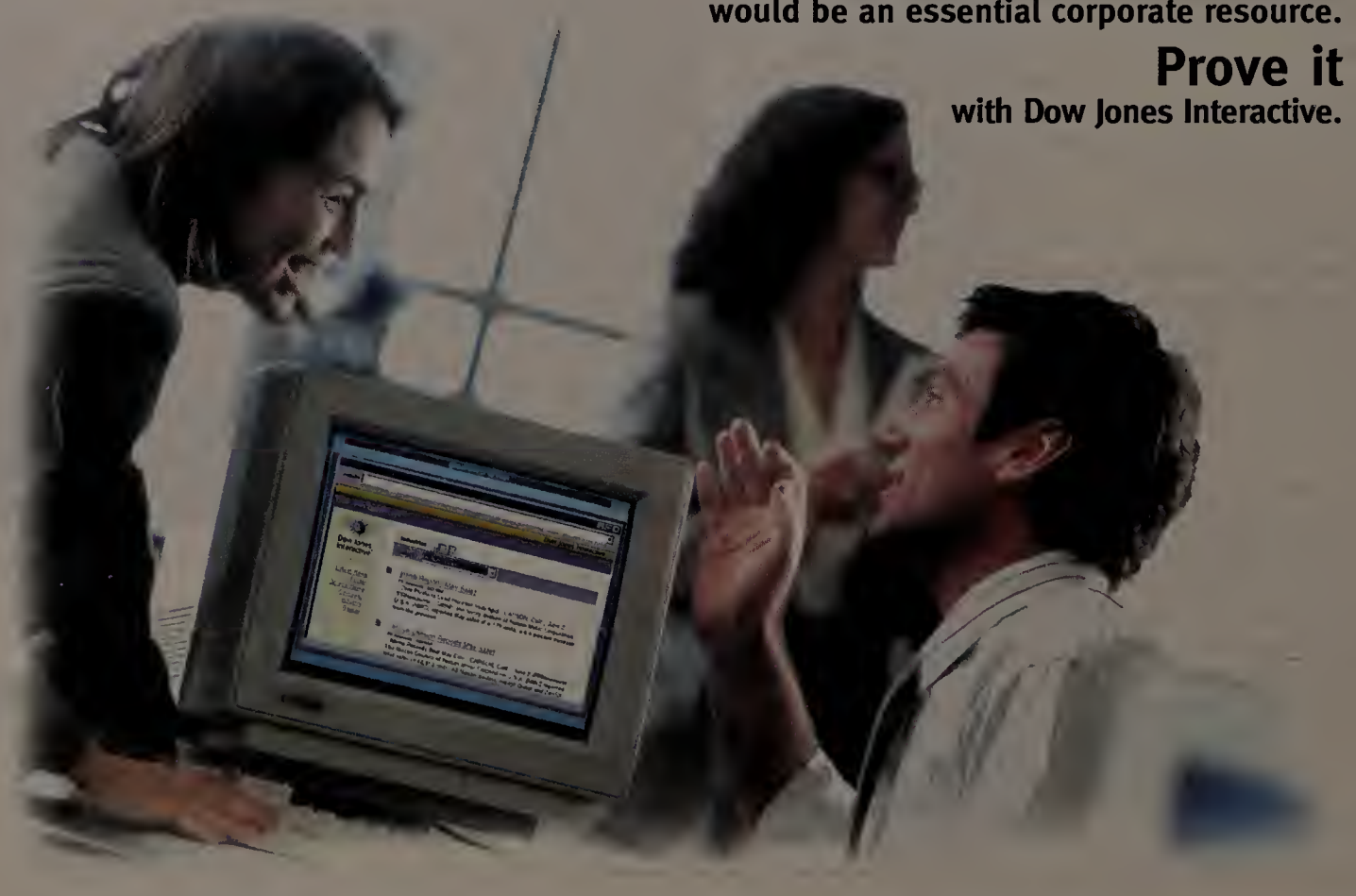
shifting order-handling to call centers. Agents who are trained to handle orders can try to persuade callers to buy additional items such as drinks and desserts, Patterson said. That's important to Mazzio's because of the low margins in the pizza business, he added.

The VPN also gave Mazzio's the flexibility to tie a dozen sites — and redirect calls previously handled at the two closed remote call centers — to the company's Oklahoma City call center. "The trend is to consolidate call centers, not add new ones," Patterson said.

Although the cost of using a VPN for data communications is only $100 less per store than a private line, according to Patterson, the savings from shuttering two call centers and not having to build another are far larger. Opening a call center for 20 sites would entail installing a $100,000 automatic call distribution phone system, $50,000 to $75,000 for a new host computer as well as the cost of paying agents, management and rent for the space, Patterson estimated. He hasn't yet determined how much Mazzio's is saving by closing the two remote call centers.

To get the VPN running, Mazzio's bought VPN routers from 3Com Corp. — a $10,000 to $12,000 one for the Oklahoma City call center and $1,000 to $1,500 units for the remote sites.

Mazzio's also plans to use its VPN to support remote workers. □



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DOWJONES

System upgrade

CONTINUED FROM PAGE 49

technology at the law firm.

A sizable portion of the investment is in a document management system that cuts down on tasks such as research. On average, Fulbright's lawyers and their support staff now spend just two hours researching each legal case using the new technology, compared with 20 hours under the older system.

The new Docs Open system from PC Docs Group International Inc. in Toronto lets Fulbright users quickly access and share key business applications such as E-mail and word processing, as well as vital documents such as legal briefs, speeches and articles.

Docs Open is an upgrade to an older version that Fulbright had been using to access more than 4 million documents stored on Novell Inc. file servers. Docs Open uses SQL databases on Windows NT servers instead.

Before the conversion could take place, Fulbright had to upgrade its desktop systems from DOS to Windows NT 4.0 workstations. The firm purchased workstations from Hewlett-Packard Co. because of HP's support for technology from Advanced Micro Devices Inc. that can automatically turn on a PC for software distribution.

But the software distribution packages that the firm originally chose didn't support AMD's technology under NT. So Horak used Computer Associates International Inc.'s Unicenter TNG framework to distribute the software to 1,600 desktops at locations worldwide. "Most users didn't realize that a 200M-byte distribution package was being transferred to their hard disks while they worked on other tasks," Horak said.

Fulbright also used Unicenter to install a newer version of Corel Corp.'s WordPerfect Suite, the standard word processor among lawyers. To do that without Unicenter would have meant hiring more information technology staff, Horak said. "It was not hard to justify that purchase," he said.

Installing broad-based applications such as Docs Open is often the stimulus for implementing large network management software packages. "Once you've put money into key business applications, you have to make sure they are reliable and perform well for the users," said Patrick Dryden, an analyst at Giga Information Group in Austin, Texas. □

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INTERNET SECURITY SYSTEMS INC. has announced RealSecure 3.0, network and host-based intrusion detection software.

According to the Atlanta company, the software monitors network traffic, operating system logs and files for signs of intrusion such as denial of service or unauthorized access attempts. When attacks occur, RealSecure can send notification via E-mail, pager or phone and can either respond automatically or track intrusion progression. It has a Windows-based central management console.

The RealSecure network engine costs $8,995, and system agents cost $500.

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SYSTEM MANAGEMENT ARTS has announced three network-analysis applications in its InCharge line: SNMP Managers, Service Impact Managers and IP Fault Managers.

According to the White Plains, N.Y., company, SNMP Managers analyzes device fault and performance problems in real time, and Service Impact Managers correlates the business impact of IP network problems. IP Fault Managers analyzes network connectivity problems in large-scale IP networks, working with Hewlett-Packard Co.'s OpenView or IBM's NetView.

Pricing for SNMP Managers applications starts at $5,000, Service Impact Managers starts at $25,000, and IP Fault Managers starts at $25,000.

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ATTACHMATE CORP. has announced Attachmate E-Vantage, host access management software designed for businesses moving to electronic commerce.

According to the Bellevue, Wash., company, the server-based software provides access to Windows NT, Unix and IBM S/390 systems and supports industry standards such as Microsoft Corp.'s Component Object Model, Java and Open Host Interface Objects, a standard recently proposed by IBM and Attachmate. E-Vantage includes object-oriented architecture, virtual private network security, centralized access management and centralized software distribution.

The host access server costs $4,995, and client access licenses cost $425.

Attachmate
(425) 644-4010
www.attachmate.com

Translation

CONTINUED FROM PAGE 49

assistants and waiters or waitresses as long as both parties were equipped with mobile phones.

AT&T Labs and the Chinese Academy of Sciences in Beijing have already embarked on a five-year research program to develop an English/Chinese speech-translation prototype aimed at travelers.

The plan is to have such a prototype ready for use by September 2003. The device would have a dictionary of several thousand words.

The ultimate aim of the project is to widen the scope of the prototype so the technology could be applied to a range of languages and could be used on regular phones, on video phones and for video-conferences.

AT&T Labs is the research and development arm of AT&T Corp. and works in a wide range of Internet- and telecommunications-related technology development fields, including audio, speech, video, electronic commerce and networking.

Much of the development work from the Chinese Academy of Sciences is coming from ongoing research and development work by the academy's Institute of Acoustics, which has a particular focus on speech processing and speech-interactive information technology. □

Haney writes for the IDG News Service in Hong Kong.

If dealing with Year 2000 PBX issues has

you frustrated, we suggest you invest in a Meridian 1.

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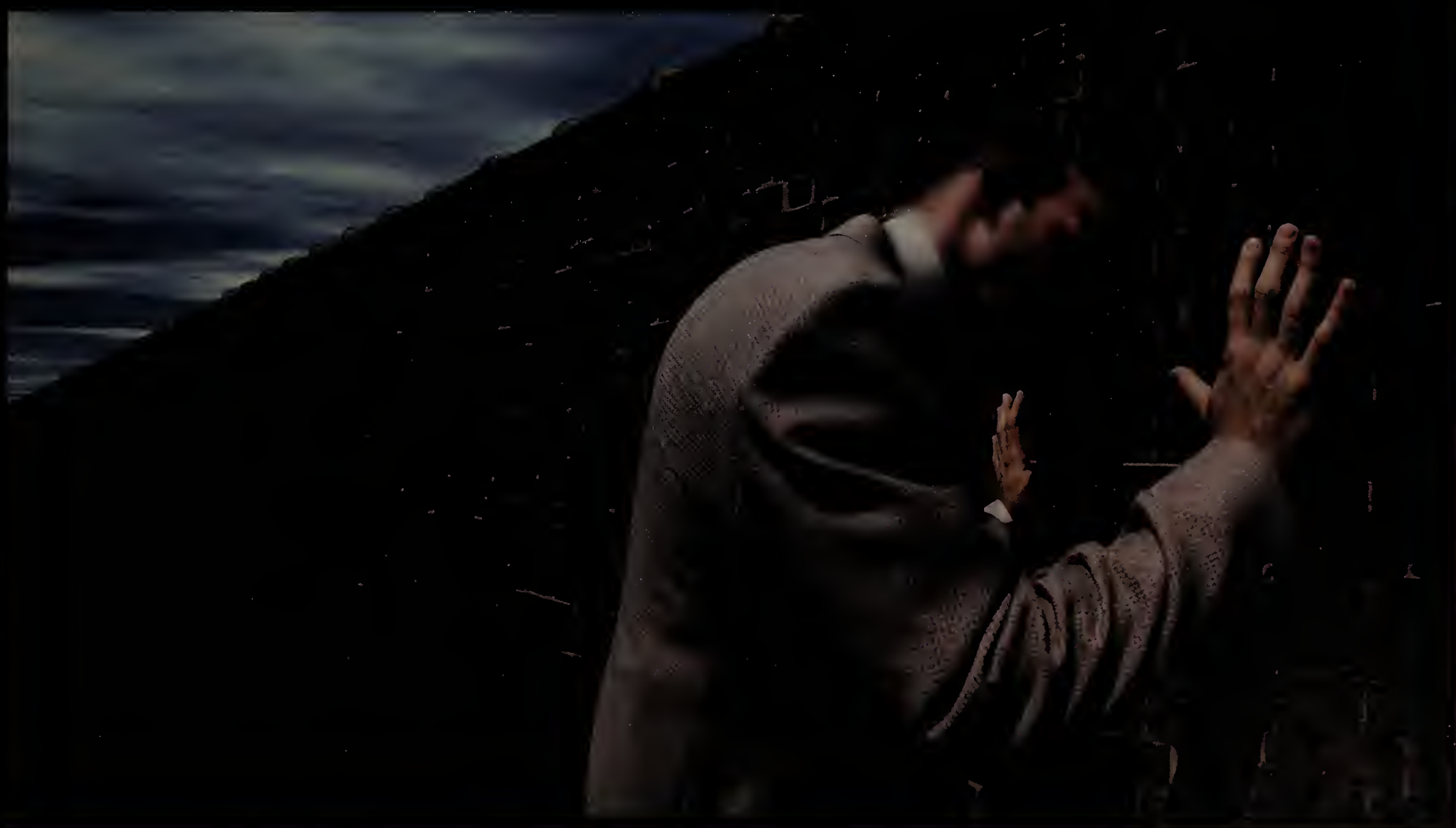

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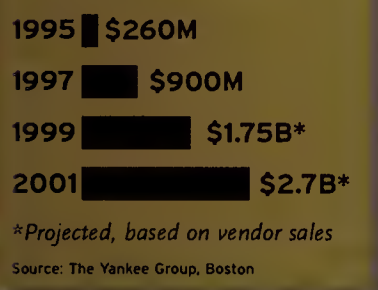


*Projected, based on vendor sales

Source: The Yankee Group, Boston

SAP finds bottlenecks

SAP AG has announced an EarlyWatch Alert software support service that will analyze continuous feeds of system data from R/3 application users to find potential performance bottlenecks. SAP also said existing services for checking R/3 throughput on go-live dates and on a regular schedule afterward are being added to its standard support package. The offerings are scheduled to become available in January.

Bug fix for IE 4

Microsoft Corp. has released a patch to plug a security hole in Internet Explorer. The hole lets hackers with their own Internet sites read a file on a visitors' PC if they know the path and file name of the document; they then use a script to retrieve it. Explorer versions 4.01 for Windows 95, NT 3.5 and NT 4, as well as the version integrated into Windows 98, are affected. The patch can be found at *http://support.microsoft.com/support/kb/articles/q169/2/45.asp/*.

Platinum signs deal

Packaged application vendor Platinum Software Corp. has signed a deal to buy DataWorks Corp., a San Diego-based maker of manufacturing software. The stock-swap deal is valued at about $93 million and should be completed by year's end, Platinum Software said. The Irvine, Calif., company added that the combined organization's workforce of 2,000 employees will be reduced, but it didn't provide details.

IT integration buoys Boeing

▸ *Object-based system wins kudos — and award*

By David Orenstein

STRICT DEVOTION to an open, standard and object-oriented information technology infrastructure is making the Boeing Commercial Airline Group's five-year overhaul of its manufacturing processes not only manageable and effective, but also an award-winning integration effort.

IMPLEMENTING CORBA

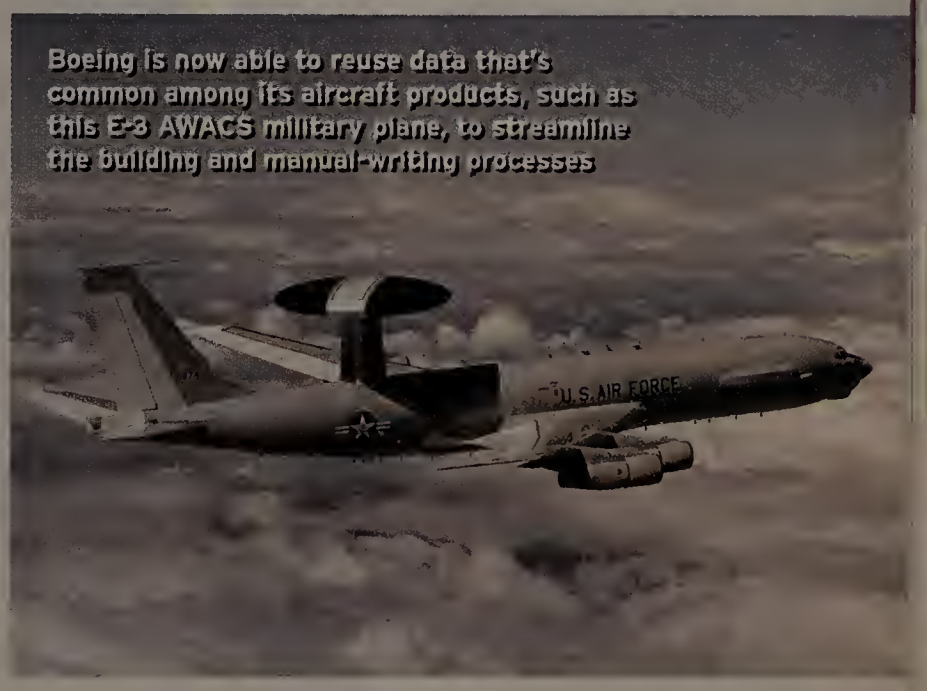
Much of Seattle-based Boeing's manufacturing is based on the set of features a customer requests for the airplanes it wants to have built. Boeing is now integrating its menagerie of once-separate systems so that tens of thousands of employees can work with a single source for specifications, parts and process data that accompany the construction of a plane from start to finish.

Under its old system, Boeing devoted a squadron of employees to make sure different data streams were accurate (see related story, page 56). Boeing also is simplifying its airplane feature sets by reusing a basic set of common features rather than treating each new order as if it were being customized from scratch.

To accomplish this integration and reuse, Boeing standardized on the Common Object Request Broker Architecture (CORBA), which can link applications or components even if they're based on different languages and platforms and run on different machines. CORBA's openness allows Boeing to use any compliant application or service that best fits its needs, said Van Cleland, the company's systems integration program manager.

By consistently applying CORBA — and requiring that its vendors work within it — Boeing has built an infrastructure that is uniform and therefore easier to support, maintain and upgrade, he said.

Boeing integration, page 56



Boeing is now able to reuse data that's common among its aircraft products, such as this E-3 AWACS military plane, to streamline the building and manual-writing processes

Publishing system eases manual labor

By Roberta Fusaro

When all the paper-based manuals for planes and helicopters seem to weigh more than the aircraft themselves, that's when you know you need a good publishing system.

That may be true for The Boeing Co. The flight and repair manuals for its Airborne Warning and Control Systems (AWACS) line of military planes alone can run up to 105,000 pages; the company found that its proprietary publishing system couldn't deal with multiple versions of the same manual needed for different AWACS models, or "tail numbers."

WORKFLOW TOOLS

That's why the AWACS Publications Division of Seattle-based Boeing is rolling out Xyvision Inc.'s Parlance Document Manager (PDM) to publish flight and repair manuals for its AWACS line. Rollouts to the group's 23 writers, illustrators and production staff should be completed by the end of next year's second quarter, said Tuan Townsend, manager of technical publications at the division.

The company has 20 years' worth of AWACS orders and information for manuals collected on paper and digitally on an Interleaf Inc. authoring system that it has used for about 10 years, he said.

Its technical writers research data about an AWACS model and enter it into the Interleaf system. An illustrator adds graphics. When everything has been reviewed and approved, the manual is printed. The system will let Boeing's AWACS group generate reports on tasks assigned. Boeing will use an ArborText Inc. Standard Generalized Markup Language

Publishing system, page 56

As in U.S., Australian companies tight-lipped about Y2K readiness

What some top companies on the Australian Stock Exchange plan to spend on year 2000 projects

Source: June 1998 year 2000 disclosure statements of the top listed companies on the Australian Stock Exchange; figures in U.S. dollars

▸ *Statements thin on details for investors*

By Thomas Hoffman

IF YOU RAN a publicly traded travel agency in Sydney, Australia, you'd have to disclose more information about your company's year 2000 project than you would in the U.S. — including whether your firm intends to have an outside company certify the code you fixed.

That makes the U.S. look almost evasive by comparison, doesn't it? No worries, mate: Most companies Down Under are being just as evasive about disclosing detailed information about their year 2000 projects as their U.S. counterparts, according to a lawyer who has analyzed mandatory public disclosures filed in Australia, the U.K. and the U.S.

As with the year 2000 project information that U.S. companies have been sending to the Securities and Exchange Commission (SEC), disclosure state-

Australian companies, page 56

Boeing integration

CONTINUED FROM PAGE 55

Each new integration is able to reuse the same technology.

"We're seeing all of these benefits based on the standard architecture," Cleland said. Most of the applications required some custom development to fit the infrastructure, which is based on Iona Technologies Ltd.'s Orbix software. But because it is open and flexible, Boeing expects its Define and Control Airplane Configuration/Manufacturing Resource Management system (DCAC/MRM) to last for decades, Cleland said.

The system is already lowering costs and improving quality (see related story at right). "It's a framework that's made to grow," Cleland said.

WON AWARD

Boeing's efforts won it an Object Award at Comdex Enterprise in Frankfurt last month for "the best use of object technology within an enterprise or large-systems environment." Jon Siegel, director of domain technology at the Object Management Group in Framingham, Mass., which sponsored the award and administrates the CORBA standard, said Boeing stands out because its comprehensive implementation covers so many aspects of CORBA.

Analyst Scott Lundstrom at AMR Research Inc. in Boston said Boeing's decision to adhere to a consistent standard is indeed rare — even among its largest corporate peers. "Very few companies have gone as far as a Boeing or a Ford Motor Co. Among [the] global 1,000, there is not an awareness of this," he said.

Boeing had the idea in mind for years. Started in 1994, the DCAC/MRM effort finished rolling out to 19 parts plants late last year. It will be rolling out to the engineering and sales employees through next summer, Cleland said. He declined to specify costs.

In addition to integrating huge business processes, DCAC/MRM encompasses a huge technology enterprise, including a Baan Co. IV enterprise resource planning system. DCAC/MRM manages the overall flow of 412,467 parts — as well as inventory and financial transactions — at the plants. It runs on more than 200 clustered Hewlett-Packard Co. Unix servers.

Almost 2T bytes of data reside on 17 Sequent NUMA-Q data server clusters. Boeing is cutting down the number of applications in the system by replacing 450 of them with four off-the-shelf applications, but more than 300 other applications are still supported. More than 1,000 Boeing employees are working on the project. □

Integrated applications improve Boeing

Boeing's planes may be top-flight, but its manufacturing processes haven't always been as smooth.

As its new system comes on line, the company says it's seeing some huge jumps in efficiency at its plants.

"We built a world-class product; we just didn't do it in a world-class way," said Van Cleland, Boeing's systems integration program manager.

For instance, the company relied on several separate streams of the same data and would treat every new order as a custom job — even though some basic features were present in all airplanes.

The new DCAC/MRM system is still rolling out, but Cleland cited several improvements that have come from modernizing and better integrating Boeing's applications and data:

▸At its machine fabrication plant in Auburn, Wash., where the system has been deployed since November 1996, Boeing orders are delivered on or ahead of schedule 85% to 90% of the time.

▸At its process assembly plant in Auburn, where DCAC/MRM was first deployed in June 1997, the time taken for parts to flow through the manufacturing process has been reduced by 80%, and defects have declined by 56%.

The right information is now getting to the right place the first time — eliminating schedule revisions that came as often as 10 times per day previously.

▸At its Interiors Responsibility Center silkscreen plant in Everett, Wash., where the new system has been in place since December 1997, seven applications have been replaced by one.

Before the streamlining effort, Boeing devoted substantial resources to manually keeping track of different data streams that will now be available to tens of thousands of users from an integrated source.

"Today, we have an army of people who do nothing but check and recheck the data in our systems to make sure it's accurate. We want to substitute our current systems with a system that provides reliable, accurate data in the first place," said Bob Hammer, DCAC/MRM vice president, in a statement.

— David Orenstein

Publishing system

CONTINUED FROM PAGE 55

(SGML) editor in conjunction with the Xyvision system to format manual text into data chunks that can be reused across a series of manuals, reducing the time needed to input information and the cost of storing redundant data.

For example, if there's a warning in a manual that applies throughout a set of books, it can be input just once.

The PDM system cost Boeing about $450,000, Townsend said, but he doesn't expect returns right off the bat.

The savings will come from quicker processing and reduced errors through automation, he said.

With the new system, members of engineering and quality assurance groups will be included in workflow and can review the technical manuals, Townsend said.

Xyvision's offerings are more sophisticated than those of competitors such as Documentum Inc. and Texcel International because they use SGML — and increasingly, Extensible Markup Language — to mark up a document's contents as opposed to just the container for those contents, said Jamie Popkin, an analyst at Gartner Group Inc. in Stamford, Conn.

SGML standardizes data across different formats and systems for reuse, he said.

Officials at Sikorsky Aircraft Inc., an early Xyvision adopter, said they can print more pages with fewer people with PDM and the Xyvision Production Publishing (XPP) systems they have used for the past 10 years.

Sikorsky also uses the technology to create flight, repair and training manuals and student guides for its three main helicopter lines.

TEXT IS CODED

About 80 writers type their information directly into an Informix database using the XPP's word processor.

The text is coded in SGML, and the PDM system filters for applicable tags to print the requested version of a specific manual.

Rita Ziegler, manager of the customer training department at Stratford, Conn.-based Sikorsky, said about 80% of the information contained in the company's manuals is common to all three lines of helicopters.

"We were looking for something to track and change common data once and version the difference data," she said.

There have been a few drawbacks. The system isn't as easy to use as it could be, she said. And the group has had problems in the past when the Xyvision system didn't adhere to requested document layouts.

But Ziegler said if the company hadn't found the Xyvision system, it would need twice as many writers and producers to create its manuals, which total about 250,000 pages per year. □

Australian companies tight-lipped

CONTINUED FROM PAGE 55

ments submitted by companies listed on the Australian Stock Exchange (ASX) "have not been particularly useful to investors," said Emilios Kyrou, a partner at Mallesons Stephen Jaques, a law firm based in Melbourne, Australia.

Kyrou presented his findings at a year 2000/euro conversion conference held in Rome earlier this month.

The conference was organized by the consulting firm Connect Inc. and the law firm Puopolo, Sistilli, Geffers & Luise, both based in Rome.

Unlike publicly held companies in the U.S. that can simply include year 2000 statements in their 10-Qs and other financial reports, Australian companies must prepare and submit a separate report on their millennium projects to the ASX.

But even though the length of the average disclosure in Australia is 4.6 pages (compared with a few paragraphs for U.S. companies), most of the content is thin on details and contains much of the same boilerplate found in statements submitted by U.S. companies, Kyrou said.

The SEC has brought disciplinary action against 37 brokerages that failed to report their Y2K readiness.

Last week, the SEC brought its first disciplinary action against 37 brokerage firms that failed to report on their year 2000 readiness.

Meanwhile, the London Stock Exchange relies on existing general disclosure requirements and hasn't introduced any year 2000-specific requirements for companies that trade on that exchange, Kyrou said.

Dissatisfied with the weak responses, the SEC began demanding more detailed project information from publicly held companies in July.

BETTER INFO

It since has been rewarded with more "detailed" disclosures, said Dean A. Morehous Jr., chairman of the technology practice at Thelen Reid & Priest LLP, a San Francisco law firm.

Kyrou said year 2000 disclosure requirements are likely to become "more prescriptive" in Australia and the U.K., as well as in the U.S.

Nevertheless, Kyrou said it's still very difficult for U.S. companies to reply truthfully to some of the SEC's disclosure requests.

"Are you really going to discuss that your business could collapse in an SEC statement?" he asked. □

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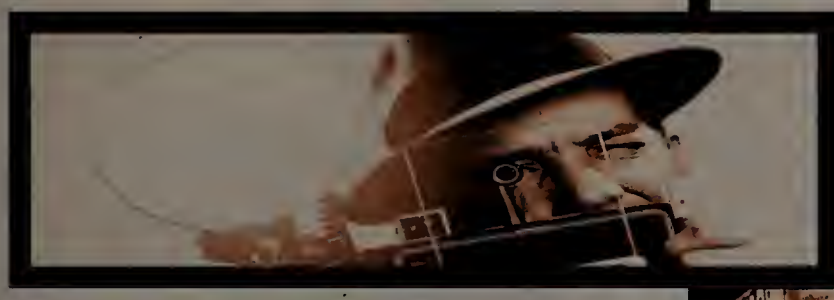

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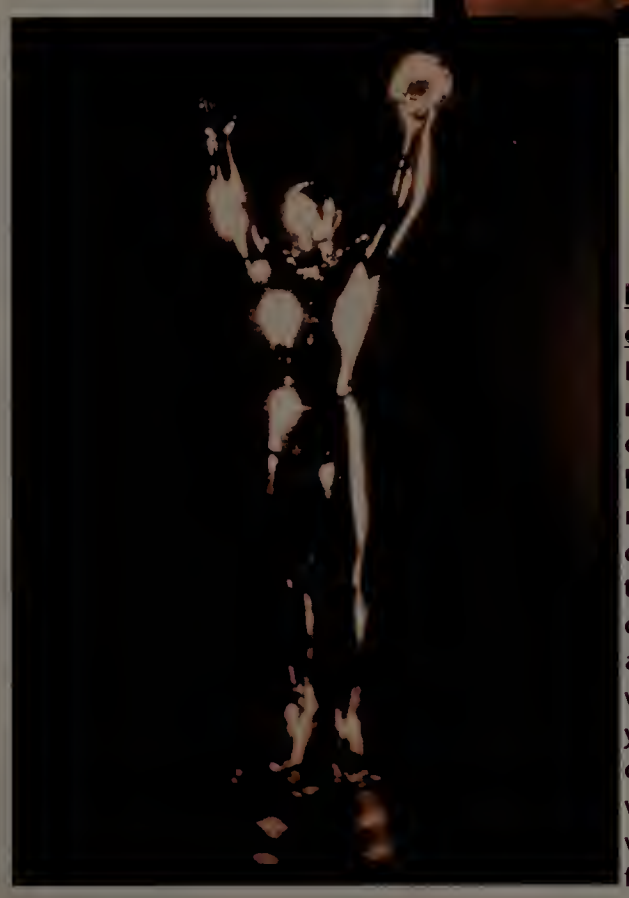

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Briefs

Server scanner

Netect Inc. in Framingham, Mass., is shipping an anti-hacker product that automatically scans servers, firewalls and other IP-based devices for security holes. HackerShield for Windows NT scans for problems listed in its database of known risks. It can automatically update the list through a built-in E-mail client. The product runs on Windows NT but can scan Unix servers. Pricing starts at $695.

Intel aids chip maker

To ensure adequate supplies of a new type of memory chip it is promoting, Intel Corp. has invested $500 million in financially struggling Micron Technology Inc. in Boise, Idaho. Micron was manufacturing the Direct Rambus dynamic RAM high-speed interface developed by Rambus Inc. and licensed to Micron. The Intel investment represents about 6% of Micron's stock.

Higher LCD prices

Demand for active-matrix LCD screens has caught up with supply. According to South Korea's Samsung Electronics Co., one of the largest flat-panel makers, this will result in a price increase by year's end. Samsung said a 12.1-in. thin film transistor screen sells today for about $240, down from a high of $700 early last year. Samsung didn't estimate the amount of the likely price increases.

WIRELESS WORLD

Most important reason cited by digital service users for choosing a wireless service provider:

Cost of service	35%
Features	16%
Brand name	12%
Coverage	11%
Recommendation	6%
Cost of phone	3%
Other/No choice	17%

Base: 781 wireless phone users

Source: The Yankee Group, Boston

Total cost of ownership

Desktop PC	$7,872
Notebook	$9,430
Windows CE mininotebook	$12,569
Windows 95 mininotebook plus desktop	$14,019

Source: Gartner Group Inc., Stamford, Conn.

Handheld 'toys' now acceptable

By Matt Hamblen

THE CORPORATE world is being flooded with what some analysts view as the "toys" of the consumer electronics marketplace, including handheld computers that help users track clients' phone numbers and organize daily schedules.

Corporate information technology managers say they already know that handhelds pose some management challenges in the areas of service and security. But managers seem to accept the devices as a supplement to the functions of desktop PCs and laptops.

"I think that the people who use the devices in my company are overall pleased," said Susan Farkas, assistant vice president for emerging technologies at New York Life Insurance Co. in New York. Her company is standardizing on IBM WorkPad

Handheld toys, page 60

Upgrades enhance clients

▸ *Users say simpler support could bolster usage*

By April Jacobs

NETWORK COMPUTING DEVICES INC. in Mountain View, Calif., plans to offer two upgrades for its ThinStar thin-client software for Microsoft Corp.'s Windows-Based Terminals next month.

Users said the new features could make support simpler and extend the reach of network computers in their companies.

ThinStar Plus and ThinStar Load Balancing will offer users of Microsoft's Windows Terminal Server both load balancing and support for key peripherals such as bar-coding devices and local printers. Windows Terminal Server is a multiuser version of the Windows NT operating system designed to support network computers.

"I will be interested in this if it's cheaper than MetaFrame, because we have users all over the globe who need access to local printers," said Jeff Baker, manager of NT layered services at Harris Corp. in Melbourne, Fla. MetaFrame is a more expensive add-on to Windows Terminal Server from Citrix Systems Inc.

Baker, who supports 2,000

Upgrades, page 60

THIN CLIENT PRICING

ThinStar Plus	$59 per user for 10-user-pack*
ThinStar Load Balancing	$79 per user for 10-user pack*
Citrix's MetaFrame**	$200 per user

*9% discount for 50-user pack
**More features, including access to non-Windows clients such as Unix

IBM speeds up virtual tape system

▸ *Seeks to keep system competitive on cache*

By Nancy Dillon

DATA CENTERS stretching the boundaries of their IBM Virtual Tape Servers (VTS) can now add some wiggle room. IBM has announced that a new compression feature will effectively triple a VTS's usable cache.

A virtual tape system such as IBM's is a "black box" disk array that sits between mainframes and tape silos. The array tricks mainframes into thinking they're connected to a collection of tape drives — hence the name virtual tape — and enables data to be recorded and retrieved at disk speeds.

The systems can also stack multiple tape volumes on a single cartridge, filling each completely. This feature helps users rein in sprawling silos.

Walt Perkowski, a vice president at Republic National Bank of New York, said he welcomes the new IBM compression feature, which bumps a system's maximum cache from 288G bytes to 864G bytes. "More cache will help speed processing," said Perkowski, who implemented an IBM VTS last year.

The value of cache is that it can cut the time it takes mainframes to reread or restore processing information "by at least a third," Perkowski said. That's

Virtual tape, page 60

GIORGIO PALMISANO

Walt Perkowski of Republic National Bank of New York welcomes the compression features IBM added to its Virtual Tape Server

$35M supercomputer may improve weather forecasts

By Jaikumar Vijayan

SOME OF THE same technology that helped IBM's Deep Blue computer beat Garry K. Kasparov at chess will soon start predicting the weather in your region.

The National Oceanic and Atmospheric Administration recently signed a $35.6 million, four-year contract with IBM for a supercomputer to help the National Weather Service improve its weather, flood and climate forecasts. It should be in service by the spring.

Under the deal, IBM will supply a massively parallel, 768-processor RS/6000 SP computer to help the service more effectively crunch the huge numerical weather models used in long- and short-term climate forecasting, said Stephanie Ken-

Supercomputer, page 60

Handheld 'toys' acceptable

CONTINUED FROM PAGE 59

handhelds (a relabeled version of 3Com Corp.'s popular PalmPilot) and has about 100 users — a number that soon may grow to include thousands of insurance agents.

MAINLY FOR E-MAIL

The WorkPads save time for users at New York Life, but they aren't being used to run any specialized business applications. "It's mainly a nice way to access E-mail or contact information," Farkas said.

Even Gartner Group Inc. in Stamford, Conn. — a research firm that often is regarded as conservative — recognizes that handhelds have their place — within limits.

"Basically, these are fashion items, consumer products," Gartner analyst Ken Dulaney told 400 mobile managers at the recent Gartner Group Symposium ITxpo 98 in Orlando, Fla.

Speaking of the wide range of devices that operate on the Windows CE or PalmPilot platforms, Dulaney told the managers that such devices probably will last only a year before they get damaged or require an upgrade, and they aren't expected to be forward-compatible with new releases. "The manufacturers expect you to throw them away, [and] they can't be serviced effectively," he said.

Generally, companies let users buy the devices on their own and charge them to expense accounts, making it even harder for IT to help handheld users when they need to set up synchronization to PCs, analysts said.

Dulaney said the average annual cost of owning a desktop PC in a company setting is $7,872. The cost jumps about 10% for desktop users who also have PalmPilots. The cost of ownership is much higher with Windows CE-based handhelds, (see chart), he said.

Several of the users in Dulaney's audience said they depend on handhelds every day, although they said they don't keep track of how much the devices cost their companies.

A federal government manager who asked that his name not be used said he doubts Gartner's cost-of-ownership numbers. He said Gartner's numbers have traditionally been 100% higher than his experience.

Farkas said she has purchased the first 100 WorkPads at a discount from a reseller, along with a service package.

She wouldn't provide financial details but said the service has mainly amounted to users calling a toll-free help line when they install a synchronization cradle to a PC.

The biggest drawback of the handhelds is that they can't truly operate remotely because they can't get through New York Life's corporate security system, which requires a smart card or digital encryption standard, Farkas said.

Farkas hopes future releases will allow remote ability to deal with encryption; until then, users are limited when contacting headquarters with handhelds. □

IBM speeds up virtual tape system

CONTINUED FROM PAGE 59

possible because the information — such as history files and log files — is read off virtual tape volumes held in disk cache, not off physical tapes that must be mounted, he said.

IBM was the first to ship a virtual tape system last year. Its debut VTS had 144G bytes of cache and no disk compression.

Sutmyn Storage Corp. in Santa Clara, Calif., shipped the Scimitar soon after, and by December it had announced 1.5T bytes of usable cache (assuming compression).

Also last year, Storage Technology Corp. in Louisville, Colo., announced the Virtual Storage Manager (VSM), which has a maximum 930G-byte cache (assuming compression). General availability of the VSM, originally due last spring, is now expected in the next few months, company officials said.

WAITING FOR VSM

David Nuechterlein, the mainframe consultant at Nissan North America Inc. in Gardena, Calif., said that despite the IBM announcement, he's sticking with his decision to wait for the StorageTek VSM before fully automating his 200,000-cartridge environment. Nissan currently uses StorageTek drives, but Nuechterlein said he considered IBM's VTS because his leases end next year.

"Considering the amount of data in our batch process, IBM's initial cache was too small," Nuechterlein said. Now that the cache has been extended, Nuechterlein said his new concern is the number of IBM's Escon interfaces.

"Processing speed isn't just limited by disk cache. It's also dependent on the number and speed of channels," he said. "In fact, I think I'm more concerned about the number of channels."

IBM's VTS offers four Escon interfaces, whereas StorageTek's VSM promises up to 16.

"Ultimately, it's a question of striking the right balance between server performance, connections, cache and back-end tape," said John McArthur, an analyst at International Data Corp., a sister company to *Computerworld*, in Framingham, Mass. He said that although the bells-and-whistles war is important, product availability shouldn't be overlooked.

"Customers need solutions today," McArthur said. "As long as the limitations are understood, early systems can provide value. IBM is already providing a lot of value to customers in very people-intensive, floor space-intensive tape environments." □

Supercomputer may improve forecasts

CONTINUED FROM PAGE 59

itzer, a spokeswoman at the National Weather Service in Suitland, Md.

Numerical weather models are built from information gathered from hundreds of weather stations globally. The meteorological information includes factors such as temperature, wind, precipitation and pressure collected by instruments on ground and in water and space.

ACCURATE FORECASTS

The information is fed into the supercomputer, which then crunches it using complex modeling equations. The greater the processing power, the more complex the equations that can be processed and the more accurate a weather forecast is likely to be, Kenitzer said.

"If we can run more complex models, it will allow us to improve the skill with which we can predict local and regional forecasts, as well as short term and long-term climate [patterns]," she said.

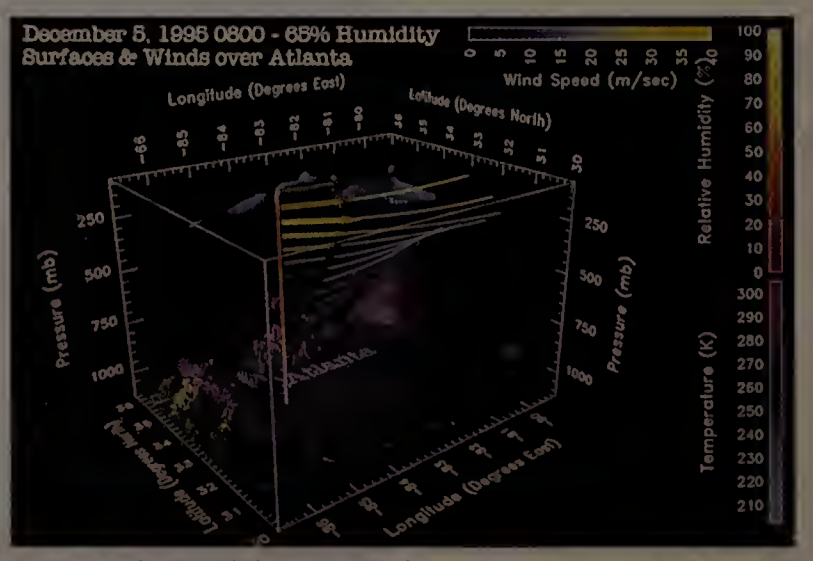
The National Weather Service's RS/6000 SP, which can perform about 690 billion calculations per second, replaces a 4-year-old, 16-CPU Cray C-90 supercomputer from Silicon Graphics Inc., which has a peak performance of 15.3 billion operations per second.

Most corporations will have little need for the huge number-crunching capabilities or scalability of systems such as these for running commercial applications. The National Weather Service's RS/6000 SP will start out with 192G bytes of shared memory, more than 4.6T bytes of disk storage and an additional 100T bytes of magnetic tape storage.

But configurations like these will be needed for growth in some areas, said James Garden, an analyst at Technology Business Research Inc. in Hampton, N.H.

"The guts of systems like these go into the [computers] required for some commercial data warehouse applications," for instance, Garden said.

Installation of the new supercomputer, which will be housed at the Suitland Federal Center in Suitland, will begin in December with initial operations starting next spring. □



Capable of 690 billion calculations per second, the National Weather Service's IBM RS/6000 SP computer will process complex weather models such as this one

Upgrades enhance clients

CONTINUED FROM PAGE 59

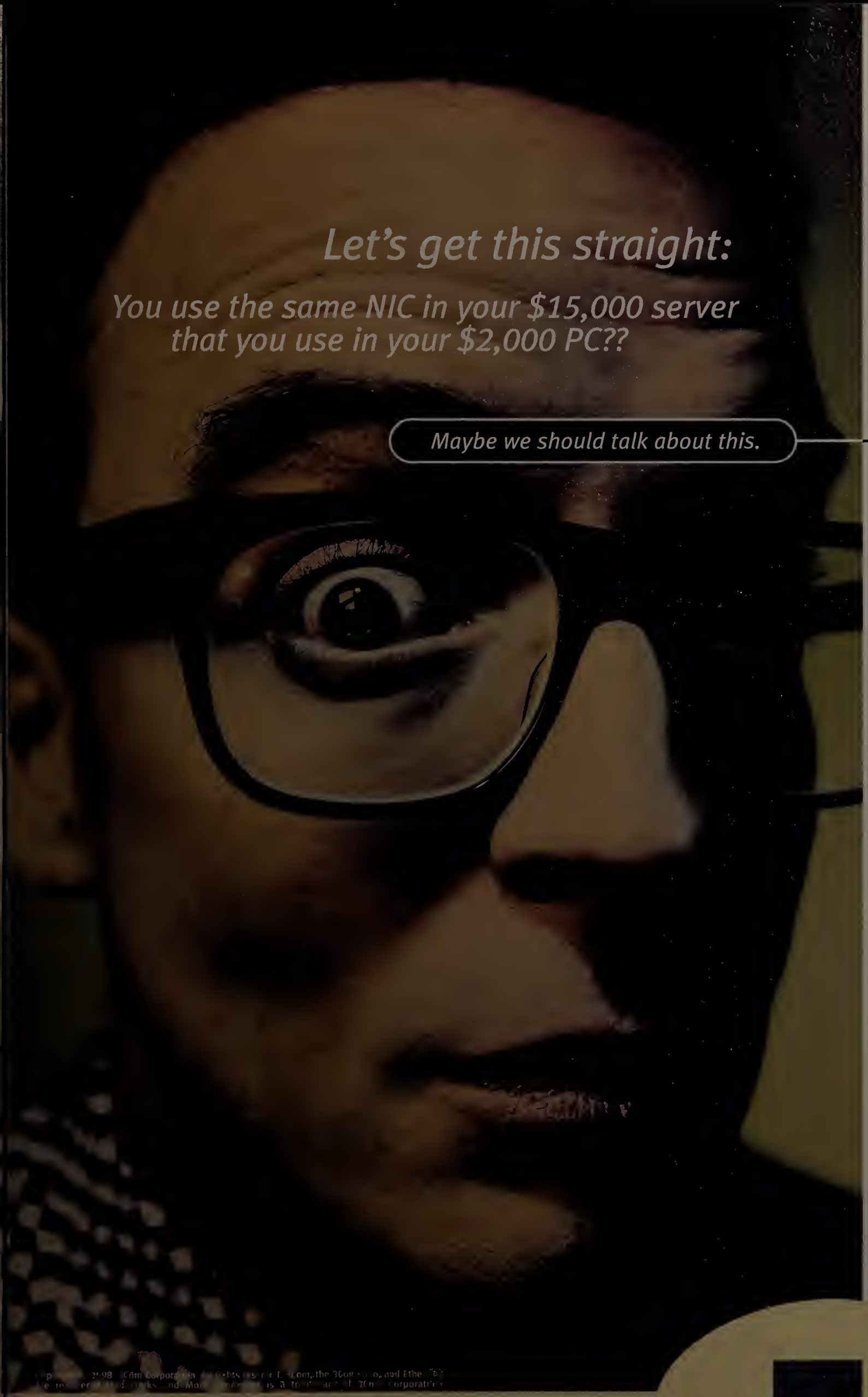
users on thin clients using software from both Citrix and Network Computing Devices, said he plans to upgrade to Windows Terminal Server for its integration with Microsoft applications.

Because Windows Terminal Server doesn't support local printing capabilities or devices such as bar coders, Baker will need MetaFrame or ThinStar to let users print to a local printer.

Load balancing, another new feature for ThinStar, helps keep thin-client users online by allowing them to work from a functional server if one crashes. Komatsu Canada Ltd. is interested in ThinStar's reliability. The heavy equipment maker — which has a network of fewer than 50 thin clients in its Mississauga, Ontario, administrative office and in dealerships throughout Canada — is considering installing more of them because it said they are easier to support than PCs.

"As with anything, the more users you have depending on a system, the more you want to make sure you can count on uptime," said William Bayer, manager of information technology at Komatsu Canada.

Pricing for ThinStar Plus will start at $59 per user for a 10-user pack, and ThinStar Load Balancing will cost $79 per user for 10 users. □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NEW PRODUCTS

PROCOM TECHNOLOGY INC. has announced NetForce 100, a network-attached storage device for Windows NT networks.

The Irvine, Calif., company said the system attaches to a network the way a printer does, decreasing the I/O burden on network hosts. It is available with capacities of 24G bytes to 80G bytes. Web-based administration software, RAID Level 5 support and an optional SCSI tape connection also are included.

Pricing ranges from $7,595 to $13,765.

Procom Technology
(714) 852-1000
www.procom.com

HEWLETT-PACKARD CO. has announced the Kayak XU and the Kayak XW. The two Windows NT workstations each features a 450-MHz Pentium II Xeon processor.

The company said each of the systems includes the Intel 440GX AGPset chip set with a 100-MHz front-side bus as well as 128M bytes of synchronous dynamic RAM, a rewritable CD drive and a 9G-byte hard drive.

The Kayak XU has a graphics card based on 3Dlabs Inc.'s Permedia 2 technology. The Kayak XW includes the HP Visualize fx6 graphics acceleration engine.

The XU costs $4,450; the XW costs $8,266.

Hewlett-Packard
(650) 857-1501
www.hp.com

MAG PORTABLE TECHNOLOGIES has announced TinyNote, a Windows 98 notebook that weighs 3.6 pounds.

According to the Santa Ana, Calif., company, TinyNote includes a 200-MHz processor, an 8-in. display, up to 32M bytes of dynamic RAM and a 2G-byte hard drive. It comes with a full-size keyboard, a 56K bit/sec. modem and a battery. An external 24-speed CD-ROM and a car/airline adapter also are available.

Pricing ranges from $999 to $1,149.

MAG Portable Technologies
(800) 533-7515
www.magportables.com

INTEL CORP. has announced TeamStation System 4.0a, a conference-room system that combines Integrated Services Digital Network (ISDN) and LAN videoconferencing with Internet access.

The company said the workstation can now combine up to three ISDN lines. It includes conferencing software, ISDN/LAN conferencing hardware, an Intel Pro/100 LAN Adapter, a monitor, a full-duplex audio speakerphone, an auto-tracking camera and a wireless keyboard and mouse.

TeamStation System 4.0a costs $13,999.

Intel
(408) 765-8080
www.intel.com

VIEWSONIC CORP. has announced the P817 XtremeMonitor, a 21-in. color monitor designed for computer-aided design, imaging and graphics applications.

The Walnut, Calif., company said the monitor has a resolution of 2,048 by 1,536 pixels. It has a 360-MHz video input bandwidth and a four-port Universal Serial Bus hub, which configures peripherals when they are attached to a computer.

P817 XtremeMonitor costs $1,849.

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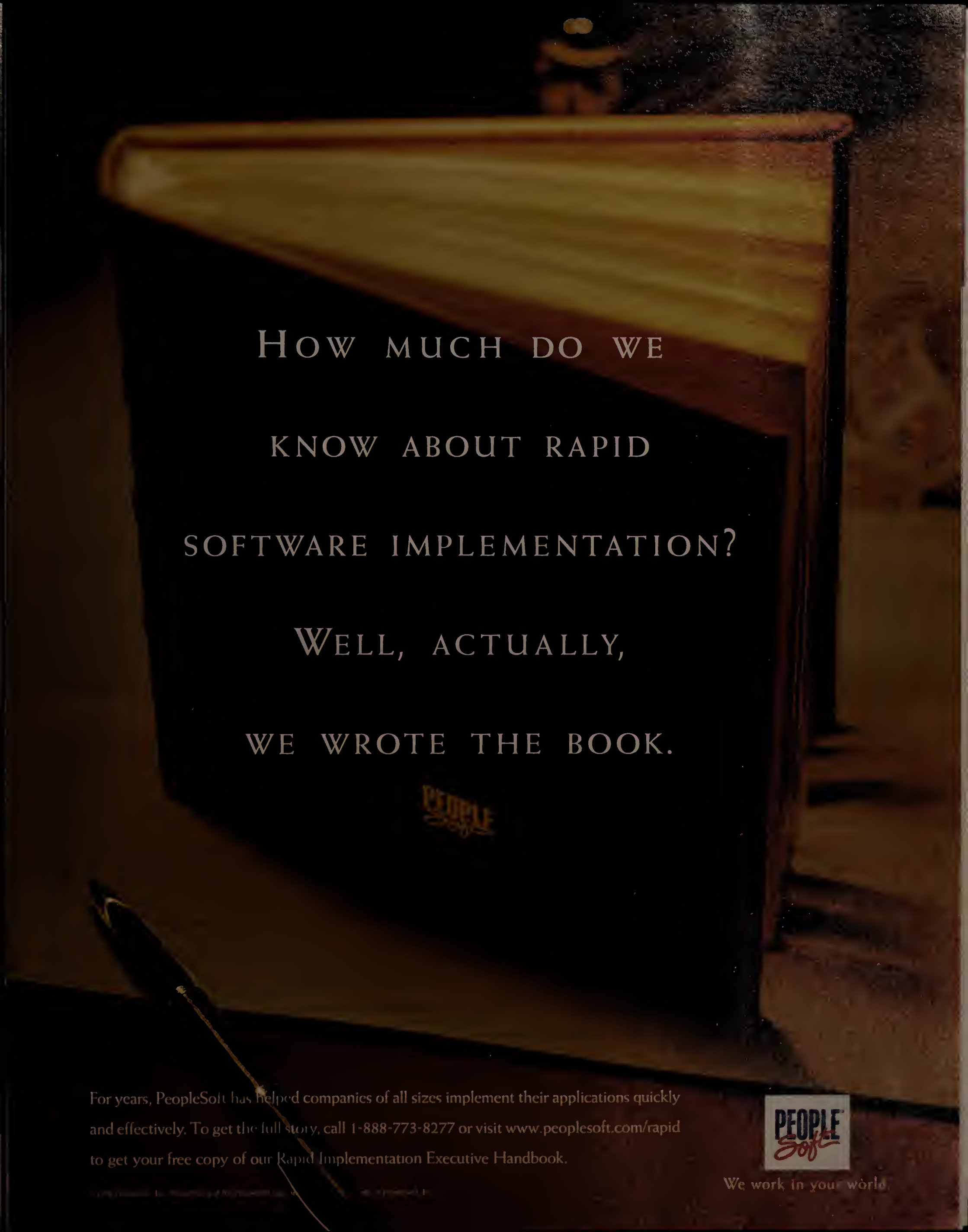
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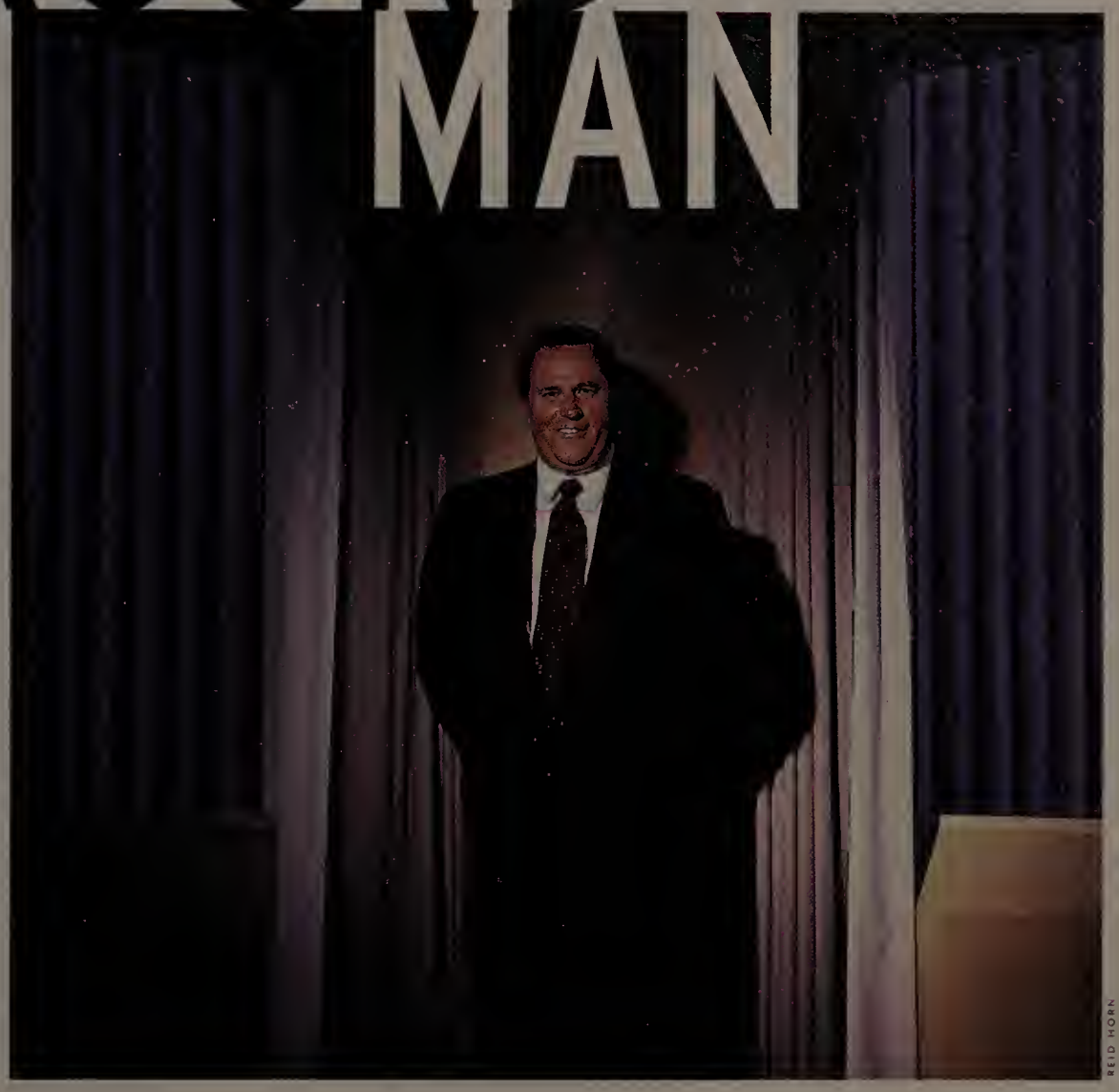
Managing

TURNAROUND MAN

After nixing an outsourcing deal, new CIO Tim Meier started making his own changes — with a little help from his friends



REID HORN

By David Raths

TIM MEIER's first move as CIO at PacifiCorp was a giant step backward.

The former U.S. Bancorp IT chief took the job at the Portland, Ore.-based electric utility in August 1997 when PacifiCorp was about to outsource most of its information technology functions to IBM.

But before he took the job, Meier convinced PacifiCorp's top executives that outsourcing was a mistake. "It's never made sense to me why large corporations that had enough" resources to run an efficient operation were outsourcing, he says. "The reason to outsource is because it costs less — period. If it costs less, I'll do it."

Meier's midcourse correction may inspire others who are unhappy with outsourcing. But such a move involves risk-taking and team-building.

Meier may have saved PacifiCorp from a serious strategic blunder when it could least afford it. The $6.2 billion company has struggled recently, with lower-than-expected earnings and the resignation of its aggressive CEO, Fred Buckman. The failed $9.7 billion takeover fight for British giant The Energy Group PLC proved disastrous.

Still, some of Buckman's gambles have paid off and turned PacifiCorp into a global player, putting more burden on its IT infrastructure. IT has become more important, says Paul Lorenzini, a senior vice president and CEO of PacifiCorp's operations in Turkey. "We have developed a more complex and demanding customer service system, and we are developing systems to strengthen our wholesale trading and risk management," he says.

Meier says he knew the retreat from outsourcing would have serious and immediate repercussions. Because the company had been openly discussing the move for more than a year, its best IT talent had walked out the door. "We had lost all of our systems programmers except the manager. I couldn't sleep at night," Meier recalls.

Although he had hundreds of jobs to fill, Meier had an ace up his sleeve. He had left Portland's U.S. Bancorp after a wrenching merger with First Bank System. As U.S. Bancorp's headquarters shifted to Minneapolis, so did most of the decision-making power within IT, leaving many Portland-area employees dejected. Meier took advantage of that fallout to bring 60 First Bank employees with him. "My management team has three PacifiCorp veterans," Meier says, "and the rest are from the bank."

The arrival of the First Bank staffers raised eyebrows among longtime PacifiCorp employees. "We all joke tongue-in-cheek about how this was a takeover by the bank," says John Paul, PacifiCorp's director of telecommunications. "But I think Tim did instill some disciplines that we were lacking before."

Instilling discipline across the board was the first thing Meier set out to do. He carried over from the bank a set of processes focused on internal customer service.

One idea was a way to address customer problems. Early each morning, 20 staffers come together, and reported problems are handed out. Staff members have a day to provide short-term fixes, then they are responsible for tackling the long-term problem.

He also put into place a project management process and hired his top project manager from the bank to run it. Now, all projects that involve more than 1,000 hours of development work or $500,000 are prioritized by an executive steering committee and overseen by a project manager.

Meier acknowledges that the early stages of his tenure were difficult and not unlike going through a merger. He had 200 IT employees in Portland (60 from the bank) and 100 more at a data center in Salt Lake City.

The Salt Lake City employees often felt left out of decision-making processes. Meier now uses E-mail and travels to Salt Lake City as often as he can to get input. In Portland, Meier holds open forums with his staff every other month to explain the unit's strategy and answer questions. He also credits morning meetings in Portland with bringing staffers together.

Sometimes they complain that it's a pain to discuss their problems with peers, but Meier says he believes that

Turnaround man, page 70

Business-to-business Web purchasing sites are popping up like mushrooms, but has anyone asked himself:

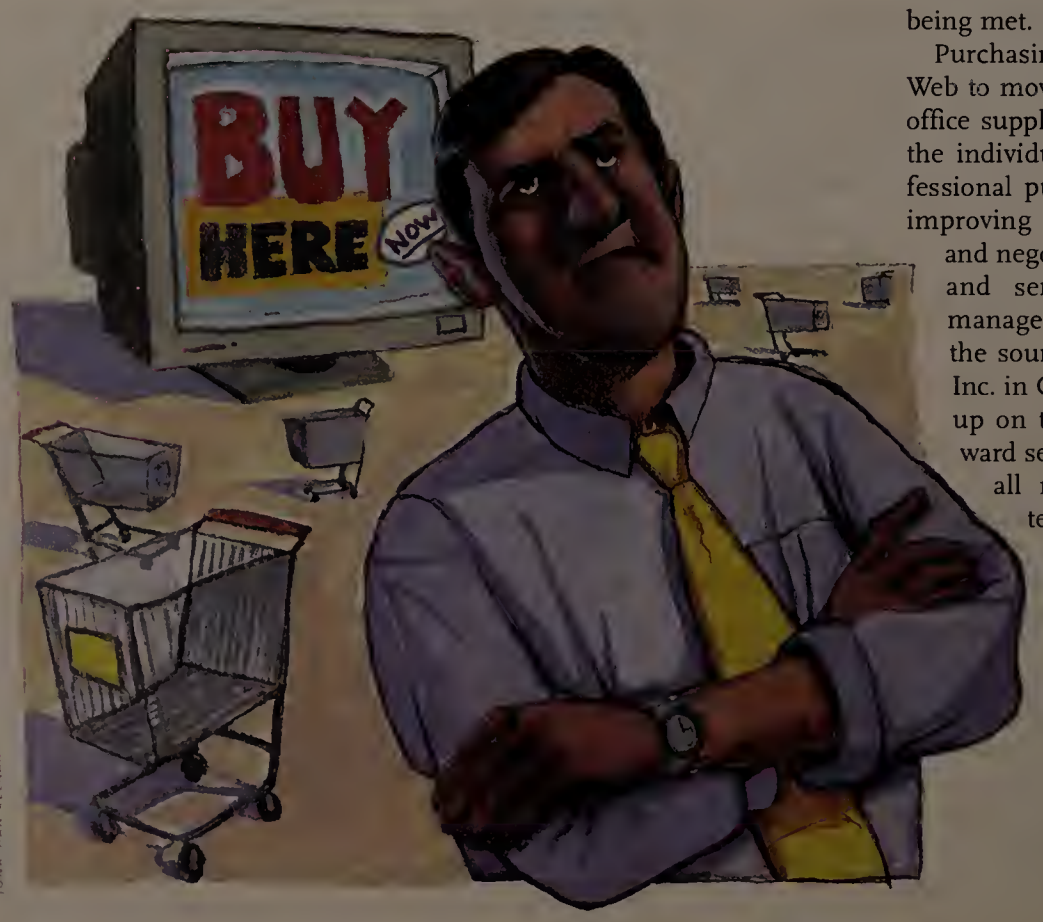
WHAT DO WEB BUYERS WANT?

BY KATHLEEN MELYMUKA

"ORDERING OFFICE SUPPLIES on the Web is not my idea of fun," says Eileen Pritzker, administration coordinator at the distribution division of Domino's Pizza Inc. in Ann Arbor, Mich.

The screens on her vendor's site build too slowly. She has to type reams of information, such as where each purchase should be billed and where each purchase should be routed. She has to scroll down off the page to find the "submit" button.

Worst of all, Pritzker says, she finds the electronic catalog next to useless. "It doesn't have everything they have in the hard copy," she says. "It's way too slow, and [finding something] is very detailed. It's just as easy for me to pull out my paper catalog and flip through the pages and find what I need, then key it in."



JONATHAN KELLAN

Pritzker isn't a happy shopper. "Generally, I'll wait till I'm about as brain dead as I can be at the end of the day. Then I'll go place an order," she says.

Is that any way to run a Web purchasing site?

But U.S. business-to-business Internet transactions are expected to account for $327 billion in trade by 2002, according to Forrester Research Inc. in Cambridge, Mass. Companies are buying over the Web to cut costs, speed service, push purchasing down to the employees who use the goods and strengthen the connection between buyers and vendors.

Some companies are buying directly from their vendors' Web sites; others are developing their own intranet buying sites that incorporate electronic catalogs from many vendors. Either way, buyer companies' needs are the same. And as Pritzker's dilemma suggests, they aren't always being met.

Purchasing managers want to use the Web to move the buying of goods such as office supplies and airline tickets down to the individual user. That frees their professional purchasers to spend their time improving relationships with suppliers and negotiating terms for buying goods and services, says Rob Heitmeier, manager of process development for the sourcing organization at Steelcase Inc. in Grand Rapids, Mich. "By setting up on the Internet, we can move toward select suppliers, reduce our overall number and negotiate better terms," he says.

CUSTOMIZATION AND CONTROL

But if users are doing the buying, Web sites have to be highly customized and include internal controls, which is "the magic buzzword that auditors like to hear," says Michael Bulkeley, project manager for the electronic catalog at Raytheon Systems Co., Raytheon Co.'s Dallas-based defense electronics manufacturing division.

Raytheon is one of the companies that has built a site on its intranet for employees to buy supplies ranging from electrical and computer parts to maintenance and office supplies.

The site was developed with the help of Trade'ex Electronic Commerce Systems Inc. in Tampa, Fla. It incorporates catalogs from about 50 suppliers and gives them a consistent and intuitive look and feel to save Bulkeley's users — who range from scientists and lab technicians to maintenance people and secretaries — from having to learn 50 ways of navigating.

The site includes products that only Raytheon employees are authorized to buy, with pricing and terms as negotiated with Raytheon. The site is customized further for each department and each person in each department.

A power user, for example, can see memory boards and software that a clerk can't. Similarly, each user screen shows only those features the user is authorized to access.

"If you don't have permission to change a cost center, you won't see a button to do that, so you don't spend a lot of time clicking around the screen," says Jon Corshen, vice president for product marketing at Trade'ex.

But even companies that purchase centrally want vendors to customize their selling sites. "We're envisioning working with key suppliers in developing Allied-specific Web sites," says Lee Garbowitz, director of corporate sourcing at AlliedSignal Inc. in Morristown, N.J. "We want information only on what we're interested in purchasing."

Buying companies also want privacy. "They want to make sure that whatever they are doing online is completely secure and private," says Chris Peters, executive vice president of MetalExchange, the Pittsburgh-based Web marketplace for the metals industry [CW, Aug. 24]. "Even in a single corporation, headquarters may not

want the folks in the trenches to see [the online business transactions]."

Other controls are equally important to Web business buyers. Raytheon added features to assure that only permanent employees can access the system, to set purchase limits, to charge the appropriate departments and to control where orders can be shipped, "so you can't ship to your garage," Bulkeley says.

Because of security concerns, Raytheon required one more overriding control: to have users go through the mechanics of the purchase on its own internal intranet rather than directly accessing the vendors' Internet selling sites. "Our security folks won't let data go back and forth [over the Internet] to complete transactions," Bulkeley explains. "We had to go through something that cauterized the data stream."

The intranet site does that by keeping all the purchase data inside Raytheon's firewall. Users complete and submit their orders, but the orders don't go directly to the seller. They're compiled periodically and sent to the various vendors via electronic data interchange.

Testing the Internet-buying waters with an intranet isn't unusual, Corshen says. "Linking directly to suppliers is an evolutionary process, not a requisite of initial implementation," he says. "A business can even [use an intranet] and then cut a paper order and mail it. The cost savings is still significant."

FIND IT FAST

When you've got electronic catalogs from 50 vendors on one site, as Raytheon does, it can be hard to find a product if you aren't sure who the vendor is. Bulkeley's site facilitates that process with cross-catalog searching that lets users type in a parts number and get a list of any products with that number from all 50 vendor catalogs.

Features to help find products are high on most companies' lists of Web wants, says Debbie Rosen, vice president of I-Supplier Solutions at Intelisys Electronic Commerce LLC in New York, which helps vendors set up electronic catalogs.

"Suppose a plant manager has a hand tool with a motor that needs to be replaced, but he doesn't know the line item or number to reorder," she says. "He wants to go to the supplier site, have a graphic picture of that tool, drill down and click on the motor."

Business buyers at a vendor's Internet selling site may even want links to other vendors. "If you want to buy a telephone and another company provides the cord, you have to be able to get that, too," says Anjan Lahiri, a client partner at Cambridge Technology Partners Inc. in Cambridge, Mass. Lahiri has been quizzing business buyers on Web site needs. "Business users want one-stop shopping," he says.

INTEGRATION

When businesspeople talk about Web sites, integration is one of their primary concerns, Lahiri says. "Whatever Web interface is provided must integrate with the current purchasing system," he says. "Otherwise you have to enter data twice, and that is completely unacceptable to a large company."

At the back end, the Raytheon intranet buying site integrates with seven accounting systems for the different business units. But a system that allows buying directly from vendor Internet sites also needs to capture the data and route it to the appropriate back-end systems.

ACCESS

For companies that buy directly from vendor selling sites, the most important thing of all — and one that's often overlooked — is access, says Shelley Taylor, managing director at Palo Alto, Calif.-based Shelley Taylor & Associates, which has studied business Web sites around the world.

Some businesses fail to realize that by developing their sites for the glitziest new browser, they may be shutting out potential customers who use less-advanced software, she says. Her suggestion: Develop to the lowest common denominator but add a link to a glitzier alternate site for users who want it.

Whether companies purchase from their own internal buying sites or from vendor selling sites, the bottom line is that people make the transactions.

"You are dealing with an individual," says Ted Leonhardt, principal of The Leonhardt Group, a Seattle-based marketing communications company with expertise in electronic commerce. "What they want is what they want. They want to know how much it costs and what they have to do to get it. They want it as fast as they can get it. The control you have is how easy you make it for them." □

Melymuka is Computerworld*'s senior editor, management.*

WEB BUYERS' DEMANDS

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INTEGRATION Users hate to key the same information twice

INFORMATION Detailed product information to order, shop, compare, choose and develop new ideas

EASE OF NAVIGATION Three clicks or fewer

NAVIGATIONAL OPTIONS The ability to find an item through its name or order number or by browsing

CONTACT INFORMATION The ability to phone a human for help

WHAT PURCHASING MANAGERS WANT

- Ability to push buying down to users
- Consistent look and feel among vendor sites
- Intuitive, training-free navigation
- Integration with buyer company's back-end systems
- Electronic catalog customized to buyer
- Privacy
- Controls on access, purchase limits, chargebacks, shipping and so on
- Enhanced search abilities
- Links to vendors of related products
- Easy access

JIM CHAMPY

THE ASIAN CRISIS AS A LEARNING EXPERIENCE

Great things can come out of adversity and hard times. That's exactly what I believe will happen to IT in Asia. But as Asia's IT professionals work their way through their crisis, there's good reason to note their progress.

That's because the strain Asia is putting on the global financial system may inevitably affect us.

On a recent Asian trip, I was struck by the severity of the financial turmoil in that part of the world. It's one thing to read about it in *The Wall Street Journal*. It's another to experience it firsthand. The immediate manifestation is the 70% to 80% discount signs in the windows of fashionable European shops. But my discussions with Asian CEOs and CIOs revealed even deeper concerns: that money problems could stop the progress of technology.

That's a result no enterprise can afford. My advice to Asian business leaders was to use the current financial constraints to make hard choices about what IT should be doing. The opportunity wrapped within their huge difficulties entails a prioritization of needs. And there's nothing like a crisis to mobilize a whole company into action.

All of which sounds familiar. When Mike Hammer and I introduced the idea of re-engineering in the early 1990s, a crisis is precisely what we had in this country. Companies were struggling through a recession, trying to find ways to grow in flat markets where new competitors were suddenly changing the rules. We prescribed tough medicine, and people took it. Frequently, they had no choice.

'CRISIS' LEADERSHIP

The mobilizing power of a crisis has often been noted. Indeed, executives occasionally ask me whether it's advisable to create some emergency. There's the almost-mythical example of Crown Cork & Seal CEO William Avery. His $5.2 billion acquisition of a French competitor in 1995 put his company into serious debt, forcing his managers to devise a new way of operating. That's a high-stakes game.

But there's another strategy. Why not assume that you're running IT under the same conditions that exist in Asia? Believe me, I'm not being masochistic here.

As an exercise, assume there's no more money to spend. Your budget is frozen; maybe it will even be reduced by 25% or 30%. That's the Asian reality.

Assume that you have to complete your year 2000 remediation but that you must also find the resources to do the other work that has been delayed — especially the work that could move your company competitively. That will force some very hard decisions. At the least, you'll identify systems that add no value to the business. In the best case, your company will emerge from coming turbulent times ahead of the pack. You can be sure that's the ambition of Japanese and Korean managers.

Hard times usually call for going back to the fundamentals; for asking tough, often basic, questions. So, as you go through this exercise, make yourself some of the following promises that may have a familiar ring:

■ Resolve to get credible with line executives. Even in Asia, CIOs are held in suspicion. Nothing seems to come on time or on budget. You don't really need a crisis to act on this. But you do need trust to lead in a crisis.

■ Resolve that you'll develop systems that will help managers measure how value is being added to the business, not just measure how money is being spent. In rebuilding, it's important to know that you're investing in the right stuff.

■ Resolve that you'll leverage the Internet to its fullest. If Asian governments respond to this crisis as they have to others, they'll invest in infrastructure. But this time it won't be roads, ports and bridges — it will be communications and computing technologies. Malaysia has curtailed an aggressive technology program that it began, but Singapore has just announced its intentions to start investing again.

■ Resolve to focus on business systems that create real value. That means they affect your customers through innovation, better service, improved quality and/or efficiency. Survival happens only if you can grow the business again.

Now, those may sound suspiciously like New Year's resolutions. But what will make them stick is your belief that you're acting under real constraints that require you to operate differently. For Asian companies, the budget limitations are totally genuine.

Yet I guarantee that their troubles eventually will make them even more competitive. So why wait for their crisis to hit here?

As the Chinese philosopher Confucius once wrote: "The man of virtue makes the difficulty to be overcome his first business, and success only a subsequent consideration." □

Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. His Internet address is JimChampy@ps.net. His newspaper columns are syndicated by Tribune Media Services.

TURNAROUND MAN

CONTINUED FROM PAGE 67

when employees work face-to-face on a burning problem, a cohesive IT strategy emerges. "Everybody here has been very supportive during this change and has adapted well," Meier says. "People realize that nobody's doing this just to make it look like the bank."

But just as in a merger, PacifiCorp's IT staff has had its share of interpersonal issues, says Rich Walje, managing director of transmission and dispatch. Walje, a 13-year veteran, credits Meier and his bank entourage with making significant changes while adjusting to PacifiCorp's corporate culture.

"In a bank, information is the business, so basically they were operations," Walje says. "Here, they're not behind the steering wheel as much. They're in more of a subordinate position."

But another initiative carried over from the bank — standardization — ran into a cultural wall at PacifiCorp, Meier says. "Here, people really value freedom of choice," he says. PacifiCorp employees view standardization as added bureaucracy.

If he's rubbed anybody the wrong way, Meier makes no apologies. "I didn't want to spend three years getting the infrastructure in place," he explains.

Although it's too early to judge the ultimate success of Meier's initiatives, his insistence that IT become more responsive to the needs of PacifiCorp employees has made him popular with executives such as Lorenzini.

Even IT staffers who preceded him, such as Walje and Paul, have been impressed. "I have a lot of respect for him," Paul says. "He takes the lead and does what a CIO should — and that is beginning to influence his fellow officers." □

Raths is a freelance writer in Portland, Ore.

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In Depth

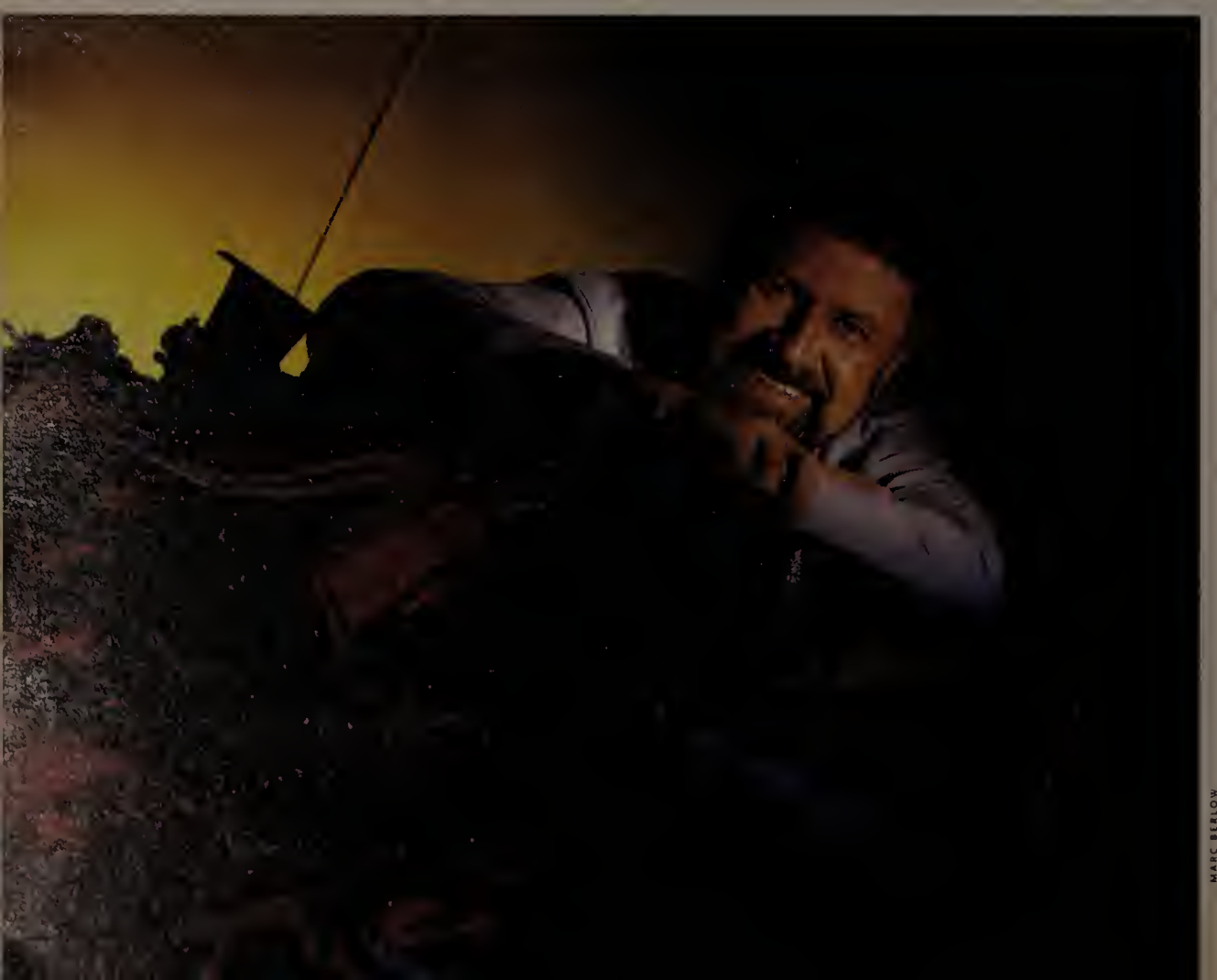
Intra-national intrigue

IT managers from GM and Siemens discover that intranet issues are the same no matter which side of the pond you're on

"GM Powertrain builds engines and transmissions. We are just one piece of General Motors, but if we were split off, we would be a Fortune 500 company. We have roughly 50,000 employees. It's a global organization. I have responsibility for Web and also intranet application development." – Robert Harr, IT architect, GM Powertrain, Milford, Mich.

Multinational corporations with scores of offices scattered across the globe may have the most to gain from the intranet explosion. By creating instantaneous, shared access to data, large companies can leverage their worldwide brainpower and minimize logistical hurdles. But the obstacles to building and maintaining an intranet are bigger for behemoths, too.

John Rymer, president of Upstream Consulting, spoke to intranet executives from branches of two companies, Siemens AG and General Motors Corp., and asked them to compare notes on implementation, content management and security.



MARC BERLOW

JOHN RYMER: How does Siemens Medical use its intranet?

HEINER MOLLEKOPF: In May '96, we made a decision to use our intranet as our worldwide information system, and we wanted to replace an existing older application system. For a year and a half [we] just used a conventional Web server. Then we switched to a Hyperwave [Information Management Inc.] server in February this year.

RYMER: And the purpose is to share information, documentation, etc., among engineers around the world?

MOLLEKOPF: Yeah. To share service-relevant documentation — especially documents which are important for the service engineers working in the field. It's quite a large number [4,500 engineers] all over the world, in all kinds of countries: Europe, Africa, the Far East.

RYMER: Bob, does this sound familiar?

ROBERT HARR: It's similar. One [impetus for creating an intranet] is a desire to be more efficient, and better communications is sought to further that end.

But also, [we wanted to] take advantage of our global resources. And that means that we need to not just send pieces of paper back and forth with our counterparts in Germany and Australia and the Far East, but to actually work with them as team members. . . . And that kind of collaboration requires a very different set of tools.

RYMER: I imagine the documents you exchange are pretty complex.

HARR: Yes. . . . It includes really every product that we deal with: mechanical CAD drawings, electrical system diagrams, software source code. And the way we have implemented that is by using Web as a front end, kind of a universal client, to get into a change-management system. And the change-management system is the repository for the source code that also allows us to keep track of the fixes and the improvements [to documents] that are done at various sites. The software for that is Continuus [Software Corp.'s] CM, a change-management system primarily targeted for software development.

FRANK REINHOLD

RYMER: Do you use that system to manage only source code, or does it apply to other content?

HARR: We are also putting our documents into it. It's not specifically designed to do that. It's not quite as good as a dedicated document management system. But what it allows us to do is to have all our work products in one repository.

RYMER: You both started your intranet experience with certain goals, but they evolved over time. How did your architectures evolve?

MOLLEKOPF: We thought the first and most important part is not what layout and what page design to use, but to structure the information well. In the last 10 years, the [format of our] documentation had diverged. It was our goal to come to a common structure of documentation for all our products. That's mainly what we did in the first one and a half years.

HARR: Many of our challenges, from the Web perspective, have related to content management. We have approximately 20,000 documents on our Web site now, and it's growing rapidly. One of the decisions we made along the way is that we're not responsible for the content of the documents. . . .

One of the issues that comes out of that is: How do we know who they are? Who is allowed to update a document? What kind of mechanisms do we build to support that? We've done two things. One is [that] the interface is Continuus. That's being used as a repository for documents, which are change-managed, meaning they are under version control. They have to be archived long term, and for us, because of regulatory and legal requirements, we may have to have them available for up to 25 years.

Then there are other documents which we describe as "informal documents." They need to get out very quickly. They don't need the formal [change-management] mechanisms. We developed two in-house mechanisms for those two categories of documents. . . . Those mechanisms allow us to delegate the responsibility for the document content to people who really understand that topic.

RYMER: It seems as if you have to constantly revisit policies to achieve the right balance.

HARR: Yes. One other balancing dimension is security. Not just the right control of who can update documents, but also read-access security. Even though we're on an internal intranet, Powertrain sells engines and transmissions to other car manufacturers besides GM. If we are under contract for a non-GM customer, we have to protect [proprietary information] from some of their competitors, including other parts of General Motors.

MOLLEKOPF: When you mentioned the read privileges, it's exactly the same in our case. We have connected an X-500 database — a directory of users — to the Hyperwave server, and we can attach to every collection — every document — a group of persons allowed to see [it]. Of course, we don't do it with the documents because the maintenance would be too hard. So we have delegated the privileges.

HARR: We're following a similar approach. We are using Netscape products on our Unix servers, and we're putting directory entries in there for all our users and, associated with them, the privileges to read various parts of our Web file system. Again, one of the balancing issues is, this technology would give us the capability to have a very complicated security structure. If we make it very complicated, the administrative burden becomes high, and the users don't understand it. So we have tried to simplify the security structure.

RYMER: Have either of you had security breaches?

MOLLEKOPF: There have been problems like that somewhere in [Siemens AG], but they are handled by our central information department. I know some figures, but of course I'm not allowed to tell you. With our [Siemens Medical] server, we've had no problem because we have no contact to the Internet. We are only in the intranet.

HARR: Our internal network is protected from the external Internet by way of a firewall system that is maintained by corporate IS people. I suspect that there have been at least attacks on it. I don't know if there were specific breaches or not. Within the area where I have responsibility, the security breakdowns have been more that someone who needed access to information was denied access.

RYMER: It doesn't sound as if security risks have prevented you from moving forward with your intranets.

HARR: It hasn't prevented it because we basically have no choice. We have to move in this direction.

MOLLEKOPF: Same answer. We have to go that direction, and we are simply relying on those firewalls.

RYMER: What benefits have you been able to document from the intranet?

HARR: I don't have dollar figures. It's more that if we hadn't done this, we would not be able to do some of our activities. For example: distributed software development. We have roughly six sites here in Michigan and several sites internationally where we're doing collaborative software development between different groups. And without . . . intranet technology, we wouldn't be able to do that.

Another thing we're doing has to do with quality system certification. QS-9000 is an automotive-specific system derived from ISO-9000. It has strong emphasis on documentation. If we weren't using intranet technology, we would have to maintain physical document centers around the world and make sure that, somehow, they all had the same physical copies of the documents at the same time. And we're talking tens of thousands of documents.

RYMER: Were there any particular champions needed to get these projects up and running? Any key managers from the business side whose support you really needed?

MOLLEKOPF: Yeah. Our decision was made by Technical Services management. Because they said, "OK, we have an outdated system, and now we want to use innovative technology because we are servicing innovative medical equipment out in the field." So there was a clear decision to go that way.

HARR: Definitely. It's almost a leap of faith at some point. There was an engineering manager who said, "This is the right thing to do. We're just going to do it." □

"Siemens Medical has about 20,000 employees. I'm IT manager in the Technical Services department. We have about 4,500 service engineers in 120 countries. Our task is mainly to distribute service-relevant information, which is documentation and data, to all those engineers worldwide."

– Heiner Mollekopf, IT manager, Technical Services department, Siemens Medical Technology, Erlangen, Germany

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CAMPUS RECRUITING

Back to school

Several years ago, the information systems organization at Burlington Coat Factory Warehouse Corp. gave a summer job to the son of one of its managers, a college student majoring in computer science at a small Midwestern university. That fall, the fledgling IT professional spread the word about his great job. The next summer, another student joined the team for three months. And the next year, another came. *By Leslie Goff*

"There are simply not enough college students to accommodate the needs of the state of South Carolina."
– Alice McCrory, IT director at Blue Cross and Blue Shield of South Carolina

MAHMOOD FUZAL

Now, Michael Prince, Burlington's CIO, is assessing how to expand the informal relationship with the school into an effective, full-blown campus recruiting program. Taking a cue from its success, and from other Burlington departments that have established campus recruiting, he says he hopes to hit several colleges in November to bring some December graduates on board. Next spring, he will start recruiting May graduates.

Prince says he's tired of the "endless cycle of job placement firms placing people with us and then recruiting them away from us." He hopes that bringing in younger, motivated professionals will help give his organization an edge. Burlington has a progressive information technology environment reliant upon advanced technologies, and Prince says he needs object-oriented programming (OOP) skill sets such as Java.

"We can retrain our current programmers to acquire some of the OOP skill sets, but we can benefit from bringing in new people who learn those skills in an academic environment and start out life with an OOP orientation," Prince says. "We are at a turning point in the way we create and integrate applications. The type of people we'll recruit can bring in skills in new disciplines that the organization needs to embrace."

Burlington may be a little late to the game this year. College seniors who are majoring in computer science and IT degree programs know they're in demand. And they're probably already talking to their first employers. Many May graduates will have several offers by the time they go home for the holiday break.

Today's college students know they're in demand. Many May graduates will have several offers by the time they go home for the holidays.

But Prince has the right idea: Companies that have a tradition of campus recruiting say they are finding between 20% and 50% of all new hires in university halls. And employers as diverse as Burlington, Blue Cross and Blue Shield of South Carolina and Fleet Financial Group Inc. are starting up aggressive campus recruiting programs.

With the new competition on campus, employers with proven track records are fine-tuning their IT recruitment programs. They are targeting campuses in the early fall instead of waiting until the spring.

TOUGHER SELL

And they are coming to terms with some new realities. Besides starting earlier, they are finding they have to offer higher salaries and are grappling with a much savvier job hunter than in years past. IT grads know what they're worth on the open market. They know they can expect multiple job offers. And they have grown much more patient at playing the waiting game.

So, in addition to the traditional campus career fairs and interviews set up through the campus career office, companies are expanding their campus recruiting in innovative ways that generate positive word of mouth among students and faculty. They're offering internship programs, sitting on curriculum advisory committees, participating in class lectures, hosting on-site industry days and seeking any and all other opportunities to impress prospective recruits.

Caterpillar Inc., for example, matches an IT leader with one of its 30 target schools each year. That allows the manager to develop a one-on-one relationship with the faculty and staff. That manager will visit the school several extra times outside of regular recruiting trips for speaking engagements and informal information sessions. In June, the company invited several professors and career counselors from each of its schools to a two-day event at headquarters called University Days.

"It's all part of developing good college relations," says Mike Zimmerman, IT recruiting coordinator at Caterpillar. "We help them understand our needs and our business, and can have a dialogue with them about their programs."

All the effort is critical to Caterpillar's future, Zimmerman notes. The company plans to hire about 100 college graduates during the 1998-99 academic year — or about half of its total new hires — for Cobol, C, C++, Java and Windows NT application development positions. Of the 100 entry-level graduates, approximately 15% will come from Caterpillar's internship program, Zimmerman says.

Other employers that offer internships say that, besides helping with staff shortages, the programs are effective in developing strong relationships with schools and gaining name recognition among students.

"One of the hidden benefits is you get good word of mouth back on campus," says Jim Bates, systems manager at CUNA Mutual Insurance Society in Madison, Wis., an insur-

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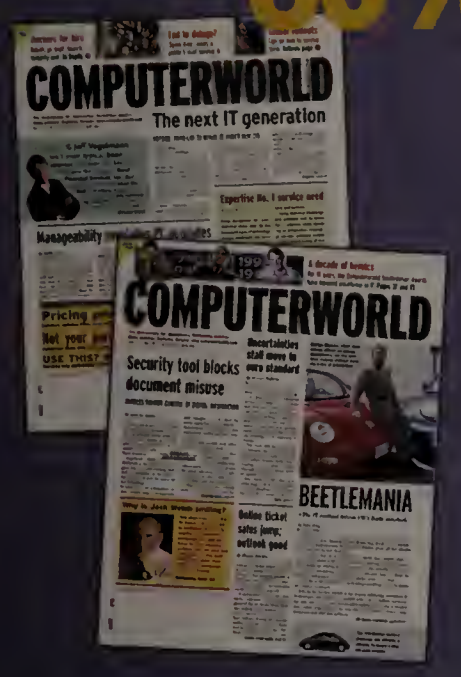

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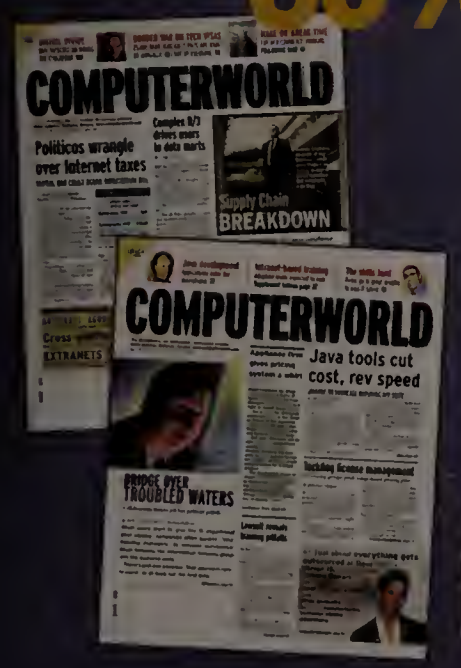

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EARLY ADMISSIONS

Some employers are finding that they can't wait for students to enter college, however. Another emerging strategy that offers some of the same benefits as an internship program is high-school recruiting.

"There are simply not enough college students to accommodate the needs of the state of South Carolina. We feel we have to go all the way back to the high-school level to promote IS as a career choice," says Alice McCrory, IT director at Blue Cross and Blue Shield of South Carolina in Columbia. "It costs us in the neighborhood of $2,000, and it is absolutely a good investment."

Facing the year 2000 problem, as well as the IT supply-and-demand gap, the insurance company began college recruiting last spring. It hired about 50 campus recruits for entry-level programmer positions in the program's first 18 months. But McCrory says she quickly realized that targeting college students wasn't enough to meet the long-term challenge of staffing her organization.

The company has joined forces with another large local employer, Policy Management Systems Corp., also in Columbia, S.C., and two universities to offer college-level IT courses to high-school juniors and seniors. If students eventually enroll in the computer science program at one of the two schools, the courses will count toward their degrees. Blue Cross and Policy Management fund the program and pay for textbooks.

Although employers are scrambling to get students' attention, even at the high-school level, they aren't straying too far outside of traditional computer science and IT degree programs to find new recruits.

PROFESSIONALISM 101

If campus recruiting has one drawback, it's the extra training necessary to transform a student fresh out of the ivory tower into a polished IT professional. Today's college students have the advantage of having grown up using computers. But in other ways they are less prepared for the "real world" of employment than employers would like.

Entry-level training programs, in addition to acquainting new recruits with a company's IT procedures, tools and methodologies, try to shape slackers into go-getters.

McCrory says she has lost about a half-dozen new recruits who couldn't come to terms with the demands of the professional environment. "They just didn't get it," she says. "They don't understand what it means to be responsible. They have car trouble, for instance, and they just don't show up and don't call their supervisor — things a teen-ager would do."

McCrory made two separate curricula for the company's 10-week training program, one that focuses on IT and one that teaches "what it means to be a professional: dressing right, acting right, being prepared for meetings — all the things you think would be intuitive, but aren't necessarily." After training, each new recruit is assigned to a mentor, who also helps with the rough spots.

The Carlson Cos., a Minneapolis-based organization that owns hotel and restaurant chains, including Radisson Hotels International Inc. and TGI Friday's Inc., also has a two-pronged IT training effort. Carlson's IT Foundations program emphasizes the technology environment shared across each of the company's four operating groups, while SMART (Student Mentoring and Readiness Training) concentrates on the less tangible aspects of the job.

"We have to teach them that in a corporate environment, everything is on a constant rate of change," explains Dave Zitur, senior director of IT. "They have to learn to make decisions based on an understanding of all the potential consequences in a changing world."

Internships fill jobs and also help a company develop a strong relationship with schools and gain name recognition among students.

But Carlson, which started campus recruiting only a few years ago, is starting to see just how much effort will be required, Zitur says. "This is a long-term effort — the payoff is five to seven years down the road," he says. "But I think people will stay and be loyal to Carlson, and that will make us more productive. The payoff is long term, and you have to believe in it." □

Goff is a freelance writer in New York.

Think nationally, recruit locally

One of the biggest challenges for a company just embarking on a campus IT recruiting effort is deciding where to invest its resources.

High-profile companies with immediate name recognition that offer the opportunity to work in enticing locations, such as Microsoft Corp. (Seattle), MCI WorldCom Inc. (Colorado Springs) or American Express Corp. (New York and a host of other large cities), can pretty much pick and choose among students at the top schools across the country.

But lesser-known firms in less exotic locales, such as Caterpillar (Peoria, Ill.), CUNA Mutual Insurance (Madison, Wis.) and Blue Cross and Blue Shield of South Carolina (Columbia) find that the best hunting grounds are the small, pastoral college towns in their states.

CUNA recruits from a half-dozen schools within the University of Wisconsin network, according to Jim Bates, a systems manager who oversees campus recruiting. Though the main campus is just down the street from the company, the school attracts such big-name employers that it is hard for the insurance company to compete. Therefore, CUNA focuses instead on branch campuses that have strong computer science and IT degree programs.

In South Carolina, the main campus of the University of South Carolina is just a stone's throw from Blue Cross and Blue Shield of South Carolina. But Blue Cross information systems director Alice McCrory says its IT program isn't as strong as those at some of the state's smaller schools. Both McCrory and Bates say it's easier to lure students from the small towns to the capital cities than it is to keep local students from seeking still bigger pastures.

"We find that if a student is dead-set on living in a large metropolitan area, they are probably not going to be happy in Peoria," says Mike Zimmerman, IT recruiting coordinator at Fortune 500 company Caterpillar.

Even though Caterpillar is an industry leader, it has low national name recognition among students. So Zimmerman prefers to recruit from within Illinois. "There, we find a large number of students who want nothing to do with the hassles of a large urban area and who are looking for a medium-size Midwestern city. So for them, Peoria has a lot to offer."

Technical colleges represent another alternative for lesser-known companies, especially when finding Cobol programmers. Many colleges have begun drifting away from Cobol courses, which many students find boring. So technical schools are filling the gap. McCrory sends recruiters to DeVry Institute of Technology in Atlanta, Bates reaches out to nearby Madison Technical College and Caterpillar goes to DeVry's Chicago campus.

— Leslie Goff

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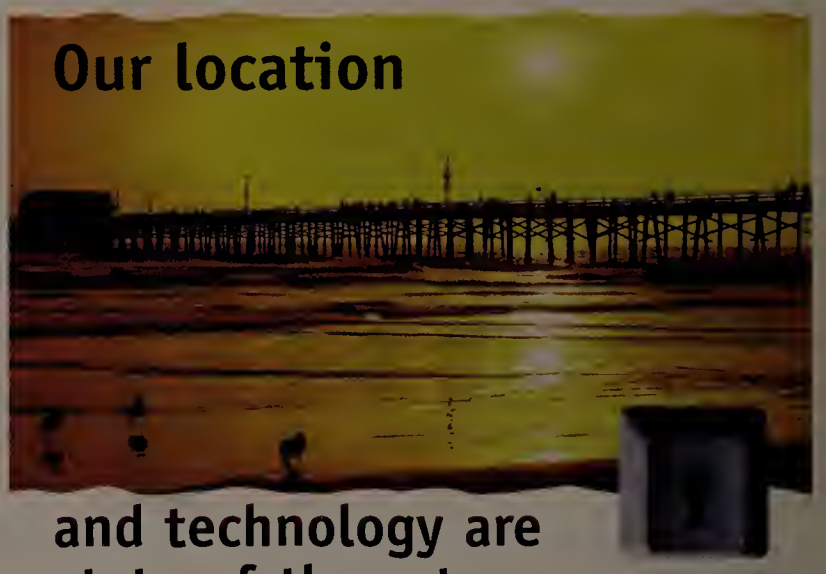

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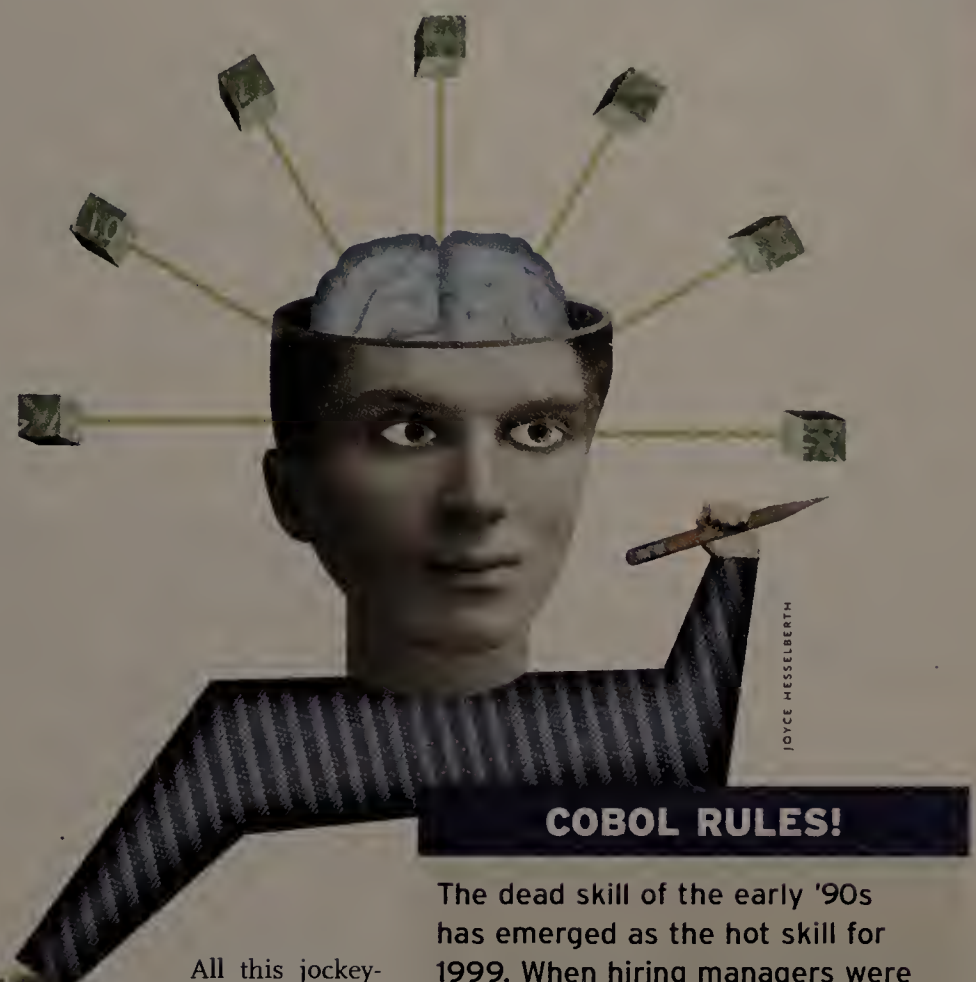
Much ado *about* mainframes

SCARCE LEGACY SYSTEMS TALENT IS GETTING SIGN-ON BONUSES, STAY-ON BONUSES AND BENEFITS GALORE. NOT BAD FOR WHAT HAD BEEN A "CAREER DEAD END"

BY FAWN FITTER


JOYCE HESSELBERTH

When it comes to IT pros with mainframe skills, Renee M. Schneider just can't get enough.

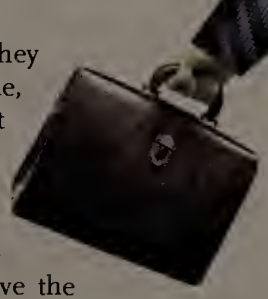
"If you lose one in this market, that's one too many," says the director of staffing for corporate information systems at Ameritech Corp. The Chicago-based telecommunications giant uses multiple systems platforms, but it relies on mainframes to run a billing system tracking more than 18 million customers. To help maintain the behemoths, Schneider hired at least 350 mainframe pros last year, with no slowdown in sight.

Ironically, only a few years ago, Leveda Magee, manager of the Newport Beach, Calif., branch of recruiting firm Data Processing Resources Corp. (DPRC), considered mainframe professionals a dying breed whose careers were "dead over in the corner." Today, Magee gets regular calls from companies that can't find enough bodies to fill the positions they have available. "I can't tell whether people aren't coming to recruiters or if there's simply a shortage of people," she says.

Companies rushing to avoid the millennium bug are driving much of this newly revitalized segment of the information technology job market. But the staffing demand promises to continue well after Jan. 1, 2000.

Many experienced mainframe pros have abandoned this work, seeing it as a step backward in a world where companies are moving aggressively toward client/server and Web-based databases, says Diane Tunick-Morello, a research director at Gartner Group Inc. Those who are still working on mainframes are often in their 40s and looking at early retirement programs. And since few colleges are graduating students with more than rudimentary mainframe knowledge, there aren't many new hands around to take up the slack.

The shortage is forcing companies to scramble for the employees they need. DPRC, for example, actively recruits online. It doesn't just post to newsgroups and career sites, but approaches people whose online activities indicate they have the skills they need. DPRC is also offering recruitment referral bonuses to its consultants, Magee says. Other IT managers are using headhunters for both full-time and contract employees, posting openings online, outsourcing and looking internationally for employees.



"We're getting experienced people through every means we can. But there simply aren't enough, so we're growing our own," Schneider says. Ameritech recruiters encourage Chicago-area colleges with mainframe courses to tailor their offerings to the company's needs. And Ameritech representatives appear regularly at job fairs, recruiting days and panel discussions. That produces an annual crop of 75 to 100 entry-level hires, who then receive five weeks of in-house mainframe programmer training.

KEEPING THEM HAPPY

Once companies find people who have mainframe skills, they are working harder to keep them. That means offering signing bonuses, milestone bonuses, holiday bonuses and any number of other perks — from flextime to telecommuting — to prevent those prized employees from jumping ship at the first whiff of a better opportunity.

"Companies are providing benefits, money, opportunities to work at home, technical assistance, help for families — everything in the world to attract and retain mainframe employees," says Sally Jablon Silver, president of Sally Silver Cos., a high-tech staffing services firm in suburban Boston.

All this jockeying to find and keep mainframe pros has pushed salaries up considerably.

Recruiters and hiring managers say it's next to impossible to put a price tag on a mainframe position, not just because pay rates vary by location, but because they keep rising. It's not unusual to see offers of $50,000 and more for development positions, and $40,000 is considered competitive for entry-level positions, hiring managers say. Raises are also larger and more frequent than before.

The big fear for many with mainframe skills is that the work will dry up on Jan. 2, 2000. But Magee predicts that year 2000 work will be available at least a few years into the new millennium as companies that don't meet the Jan. 1 deadline scramble to catch up. And Tunick-Morello says that many companies still run their basic business programs on mainframes.

In fact, there may be more mainframe-related work in the future than today. Some companies are turning to mainframes as database servers, Silver says. Besides, she adds, "We are increasing, globally, our reliance on information technology. Companies will grow and consolidate, and someone will have to manage and merge their systems." □

Fitter is a freelance writer in Boston.

COBOL RULES!

The dead skill of the early '90s has emerged as the hot skill for 1999. When hiring managers were asked for their "most wanted" skill for next year, Cobol was No. 1

Companies with Cobol skills on staff now	35%	top response
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Companies planning to train for Cobol in 1999	7%	top response
Salary premium paid to staff with Cobol experience	2%	top response
Salary premium paid to contractors with Cobol experience	14%	top response

Source: *Computerworld*'s upcoming Annual Skills Survey (to be published next month)

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SOFTWARE ENGINEER to lead a team of programmers to provide on-site consultancy in design and development of client/server applications using PowerBuilder with RDBMS Sybase system, Oracle, DB2 and SOL and CASE tools IEF; database administration, data modeling using ERWin and design, and object oriented analysis, design and programming; use Booch and OMT object analysis and modeling methodologies, Smalltalk, C++; Intranet publishing applications with HTML, CGI; develop applications in N-Tier developing environment using OEC's, Entera. Require: M.S. in Computer Science and two years experience in the described job duties. 40% travel to customer's location within the United States required. Salary: $65,000 per year, 8 am to 4:30 pm, M-F. Mail resume to: President, YASH Technologies, Inc., 2100 Parklake Drive, NE, Suite F, Atlanta, GA 30345-2167.

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SOFTWARE ENGINEER to design, develop, test, implement, maintain and support various application software under 3-tier client/server environments using object-oriented methodologies, C++, PowerBuilder, Oracle, Designer/2000 and ERWIN on Windows 95/NT platforms; Convert existing Legacy System Applications to the Common Integrated Client/Server Application Platform. Require: M.S. degree in Computer Science with two years of experience. Extensive paid travel on assignments to various client sites within the U.S. is required. Salary: $80,000 per year, 8:00 am to 5:00 pm, M-F. Apply by resume to: Raghavendra Kulkarni, President, Pro Softnet Corporation, 6525 The Corners Parkway, Suite 400, Norcross, GA 30092; Attn. Job RK

SYSTEMS ANALYST to analyze, design, develop, modify, implement, and maintain computer systems and application software in MVS/ESA environments using CICS, COBOL, DB2, VSAM, JCL, TSO/ISPF, OMF, SPUFI, FILEAID, ENDEVOR, EXPEDITER, EASYTRIEVE and PANVALET. Require: B.S. degree in Computer Science/Engineering, or a related field with two years of experience in the job offered or as a Programmer Analyst. Extensive paid travel on assignments to various client sites within the U.S. is required. Salary: $68,000 per year, 8 am to 5 pm, M-F. Send resume to: John Watson, Senior Vice President, IMA Plus, Inc., Baywood Center III, 9428 Baymeadows Rd., Suite 500, Jacksonville, FL 32256; Attn: Job DD.

SENIOR SOFTWARE ENGINEER. Will be responsible for system study, designing, coding, testing and implementation of computer systems. Will use hardware such as PCs, Sun Stations, Hp Machines. Work with C, C++, Visual Basic or Powerbuilder, ORACLE, SQL, Windows NT/95, MFC. Knowledge of Java and HTML. Will use object-oriented design methodologies. Will be responsible for user training. Must be willing to travel and relocate as necessary. 12 Positions Available. Req'd: Bachelor's Degree in Computer Science or related field and 2 years experience in a related occupation as an Engineer. 40 hrs/week, $65,000/year. Submit two(2) copies of resume to P.O. Box 8968, Boston, MA 02114. Refer to Case #80211.

SENIOR SOFTWARE ENGINEER: Design and develop client/server applications in open environments including designing and developing GUI and database performance systems analysis and designing, developing and testing, installing and maintaining customized systems. Analysis, design development and implementation of three tier object oriented client/server systems. Requires: B.S. in C.S., E.E., Math or other quantitative field and 3 years client/server software development experience using C or C++ and Visual Basic. 40 hrs/wk (8:00 a.m. to 5:00 p.m.); $66,000/yr. Send two (2) resumes/respond to: Job Order #99-0088, P.O. Box 989, Concord, NH 03302-0989.

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SOFTWARE ENGINEER: Design and development of a Client server application for a global network under UNIX environment. Must have demonstrated ability in C and C++; and demonstrated ability in TCP/IP communication. Must have BS Degree and 3 years experience in job offered or in software development. 40 hrs/wk, 8am - 5pm, $70,000/yr. Send 2 resumes to Case# 80150, P.O. Box 8968, Boston, MA 02114.

Software Engineer, Malden, MA; Analyze, design and develop applications based on client/server architecture using SYBASE, DB-Lib, stored procedures, SOR and UNIX shell scripts. Design and develop applications using Focus and Advanced Revelation. Provide technical support. Req'd. Masters in Engineering or Computer Science. 1 yr exp in job offered or 1 yr experience as a Programmer Analyst. 40 hrs/wk, 9:00am-6:00pm, $65,832/yr. Submit two (2) copies of his/her resume in response to: Case #80346, P.O. Box 8968, Boston, MA 02114.

SOFTWARE ENGINEER to design, develop, implement, test, maintain and support application software using C, Pro*C, ORACLE, Developer/2000, Oracle Forms, Oracle Reports, Crystal Reports and LOFTWARE on UNIX platforms. Require: B.S. degree in Computer Science/Engineering with 2 years experience in the job offered. Extensive paid travel on assignments to various client sites within the U.S. is required. Salary: $60,000 per year, 8:30 am to 5:30 pm, M-F. Contact: Jack Patil, President, Americus Global Software, 2022 Powers Ferry Rd., Suite 225, Atlanta, GA 30339; Attn. Job VM.

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SENIOR
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The Seebeck Computer Center at The University of Alabama, located in Tuscaloosa, Alabama, is seeking applicants for the position of Senior Systems Programmer. This position works under the supervision of the MVS Systems Project Leader and will have primary responsibility for installing and maintaining IBM CICS and DB2, as well as various other components of the University's IBM OS/390 Operating System plus assorted third party products to include those from Candle and Platinum.

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In addition, this group is responsible for evaluating system hardware and software performance, determining system workload characteristics, predicting trends in workload characteristics, and making suggestions for hardware and software upgrades. This group also acts as an advanced troubleshooting team to assist application programmers and users resolve difficulties that require a System Programmer's unique talents. In addition, members of this team are called upon for advice when developing plans for new application systems. The team of Systems Programmers also serves as a training and advising resource for the Operations and User Service staffs.

Requirements for this position include a thorough knowledge of IBM MVS or OS/390 internal operating system concepts, expertise in language and compiler design and implementation, run-time environment, system utility usage, and some background in data communications. A demonstrated proficiency in basic assembler language and COBOL is required. A four year degree in a technical field, such as Computer Science, is required. Also, a minimum of seven years of work experience, after college graduation, as a Systems Programmer is required. An alternative to the college degree plus seven years work experience requirement is a college degree plus five years experience as a Systems Programmer plus an additional five years work experience in the field of computer programming.

Please submit resume or application for this job to: The University of Alabama Employment Office, Box 870364, Tuscaloosa, AL 35487-0364. Please include your Social Security number with your application. The deadline for applications is November 15, 1998. Salary will be competitive with regional and other SEC school packages.

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SENIOR SOFTWARE ENGINEER (Job location: Jacksonville, FL) to design, develop and test object oriented applications using Microsoft Visual C++, Visual Basic; migrate UNISYS A Series mainframe applications to client/server applications; provide A Series system support for COMS, DMSII, BNAv2 and TCP/IP; design and develop TCP/IP communication software using ALGOL and C++; use COMS-COBOL74-DMSII and XGEN programming to design and develop mainframe applications. Require: B.S. in Electronics Engineering or Computer Science and four years experience in the job offered or as Lead Analyst. 50% travel required to customer sites within the United States. Salary: $55,000 per year, 8 am to 5 pm, M-F. Mail resume to: Bureau of Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, Job Order Number FL-1864112.

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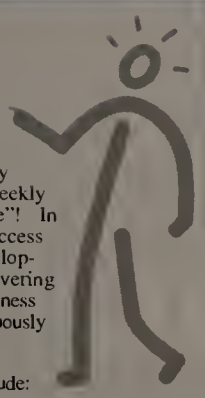

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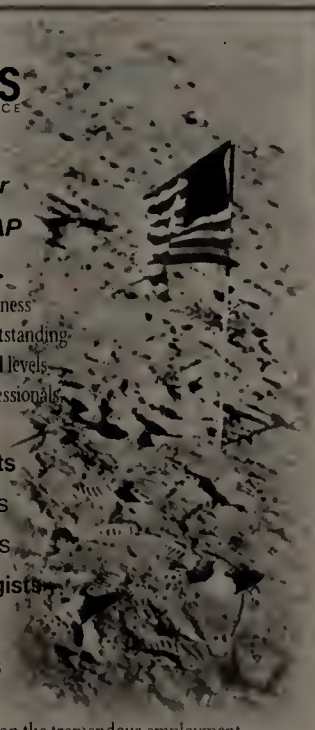

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Programmer/Analyst. Plan, develop, test, and document computer programs, including software design and development, applying knowledge of programming techniques, business analysis requirements and data organizational knowledge to design application structure using object-oriented software development and design skills and Forte, Oracle, DOS, UNIX, Windows 95 tolls, and C++ Must be willing to relocate within the U.S. on project-by-project basis. Must have Bachelor or foreign degree equivalent in Math, Computer Science or related and 2 years' work experience in job offered or 2 years as Programmer, Analyst, Software Developer, or related. Hrs: 9a-5p, M-F. $53,800 per yr. Apply to Georgia Dept of Labor Job Order #GA 6293479 2943 N Druid Hills Rd, Atlanta GA 30329-3909 or the nearest Dept of Labor Field Service Office

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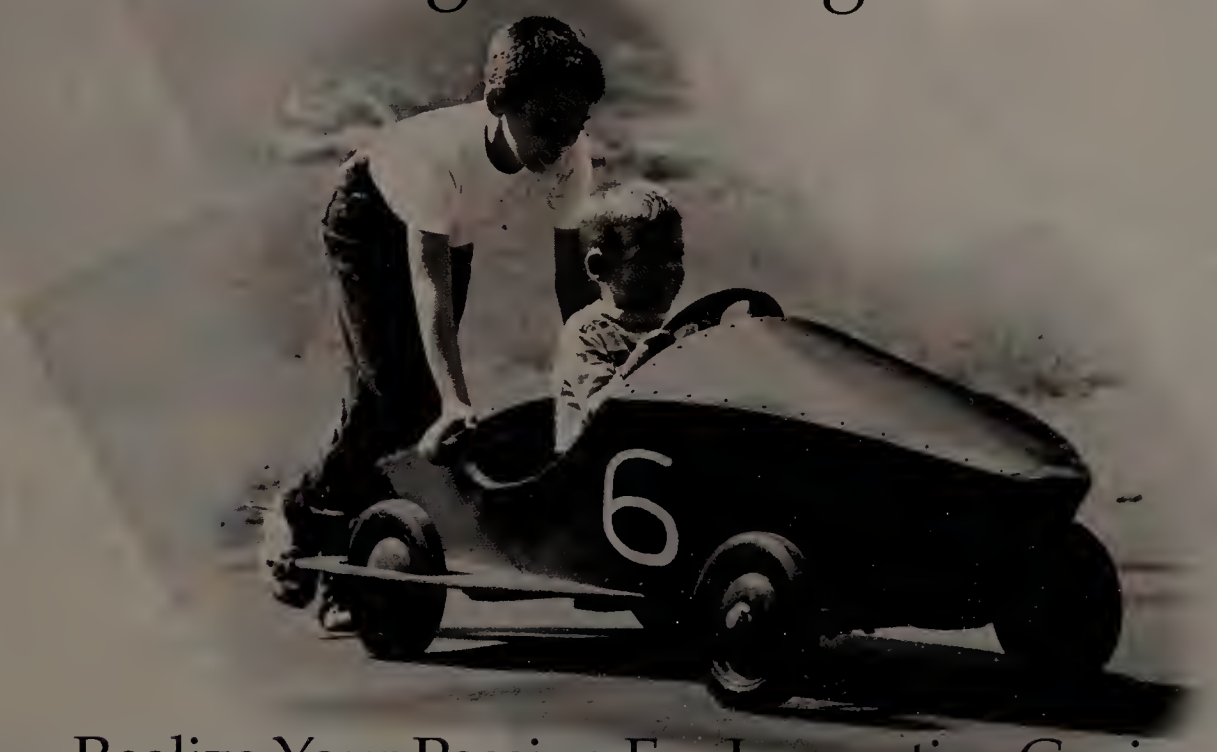

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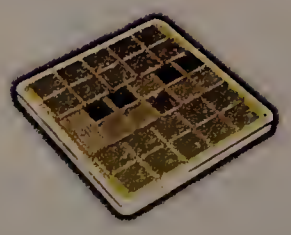

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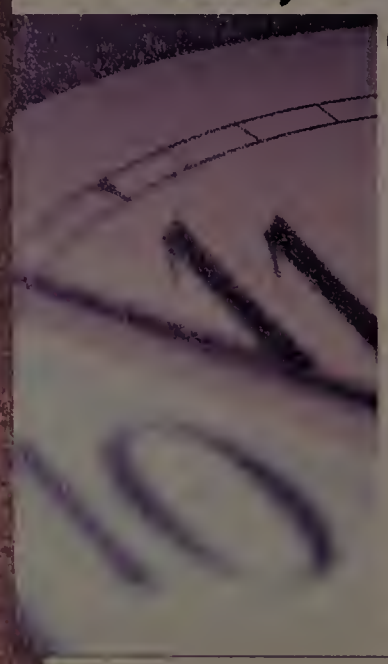

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The Week in Stocks

Gainers

PERCENT

Checkfree	83.8
Structural Dynamics Research	68.9
Winstar Communications Inc.	65.1
Auspex Systems	53.3
Adaptec	48.6
Adaptec Inc.	48.6
Avid Technology	42.9
Globalstar Telecom. Ltd.	37.9

DOLLAR

Amazon.Com	16.94
America Online	13.69
Nokia Corp.	10.50
Tellabs Inc.	10.38
Winstar Communications Inc.	10.25
Kla Instruments	7.94
Qualcomm	7.75
Checkfree	7.75

Losers

PERCENT

Call-Net Enterprises	-21.8
Shared Medical Systems	-19.3
H80 & Co.	-19.2
Syntel Inc.	-19.1
Cadence Design Systems	-15.4
Open Text Corp.	-13.9
Sterling Software Inc.	-13.6
Peoplesoft Inc. (L)	-13.4

DOLLAR

Shared Medical Systems	-10.06
H80 & Co.	-5.69
IDX Systems	-4.63
Sterling Software Inc.	-4.00
Cadence Design Systems	-3.81
Syntel Inc.	-3.25
Peoplesoft Inc. (L)	-3.00
Hnc Software	-2.91

INDUSTRY ALMANAC

EBay shows promise

As the stock market slumped last month, Internet auction company EBay Inc. (Nasdaq: EBAY) was surging. On its first trading day, Sept. 24, the company's stock shot up 167% from its $18 initial public offering price to close at $47.375. After falling to a $29 close on Oct. 8, positive ratings from three Wall Street brokerages last week pushed the stock above $50.

EBay's Web site, established in 1995, facilitates sales from consumers to consumers, making money through posting fees and sales commissions. The company doesn't touch the merchandise or get involved with how money changes hands between buyer and seller.

Rakesh Sood, an analyst at Goldman, Sachs & Co. in New York, praised EBay's approach to online sales as "the most profitable commerce model out there," adding that the stock has room to grow. The penetration of the consumer-to-consumer Internet sales market is "probably less than 1%," and EBay can take advantage of the potential, Sood says.

Eric Brachfeld, an analyst at McFarland Dewey & Co. in New York, calls EBay an "example of a company with a leadership position getting a premium valuation. Having a head start makes a big difference." Buyers gravitate to where the most sellers are, and sellers seek sites that attract the most bidders, he says. EBay listed 822,640 items for sale last week.

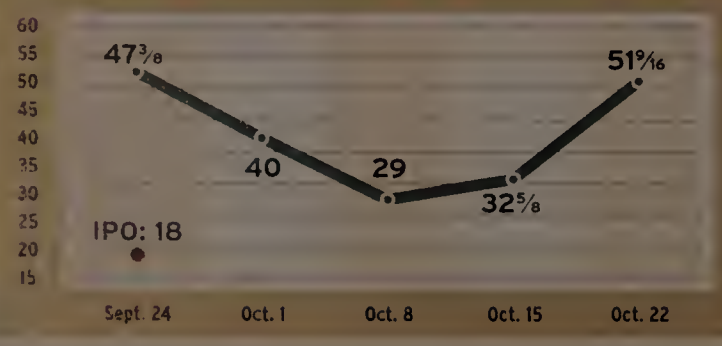
Last week, Goldman, Sachs added EBay to its Recommended List, with a target of $90 in 12 months. BT Alex. Brown Inc. in New York and BancBoston Robertson Stephens Inc. in San Francisco also rated the stock a Buy last week.

Brachfeld says EBay has little competition in consumer-to-consumer auctions. Onsale Inc. (Nasdaq: ONSL) uses online auctions to sell products, but Onsale and EBay aren't going head-to-head in helping consumers sell to other consumers.

EBay recorded a fiscal 1997 profit of $874,000 on $5.7 million in revenue. — Jeremy Selwyn

INVESTORS BID UP EBAY

Internet auctioneer EBay's stock last week made its second big jump since its September initial public offering



Exch	52-Week		Range	Oct. 23 1 PM	Wk Net Change	Wk Pct Change
Software						**UP 9.1%**
ADBE	51.87	23.62	Adobe Systems Inc.	36.00	-0.13	-0.3
AZPN	56.87	6.12	Aspen Technology Inc.	10.63	1.69	18.9
ADSK	50.06	21.62	Autodesk Inc.	25.81	1.38	5.6
AVID	47.75	11.06	Avid Technology	20.19	6.06	42.9
BOOL	26.00	16.00	Boole & Babbage Inc.	25.00	4.81	23.8
CDN	39.00	19.12	Cadence Design Systems	21.00	-3.81	-15.4
CBTSY	63.87	6.68	CBT Group Plc.	8.50	1.19	16.2
CHKPF	50.50	10.87	Checkpoint Software Tech.	22.50	4.63	25.9
CTXS	76.75	36.37	Citrix Systems Inc.	63.63	4.13	6.9
COGNF	30.50	14.75	Cognos Inc.	19.00	2.25	13.4
CA	61.93	26.00	Computer Associates Int'l Inc.	38.75	2.88	8.0
CPWR	63.00	27.62	Compuware Corp.	52.38	4.63	9.7
DCTM	59.62	16.75	Documentum	34.75	4.88	16.3
EFII	55.50	12.87	Electronics For Imaging	22.44	0.38	1.7
HNCS	47.12	22.50	Hnc Software	27.34	-2.91	-9.6
IDXC	55.75	28.37	IDX Systems	41.00	-4.63	-10.1
IFMX	10.43	3.50	Informix Software Inc.	5.13	0.34	7.2
INTU	67.93	26.25	Intuit	48.00	3.75	8.5
JKHY	50.25	22.75	Jack Henry Aso	43.06	0.63	1.5
LGTO	56.18	16.00	Legato Systems Inc.	40.81	-0.88	-2.1
MACR	19.31	7.12	Macromedia Inc.	17.06	0.75	4.6
MANU	66.37	6.12	Manugistics Group Inc.	10.81	2.56	31.1
MENT	11.87	5.43	Mentor Graphics	7.69	0.78	11.3
MSFT	119.62	59.00	Microsoft Corp.	108.06	3.31	3.2
NETA	56.87	25.50	Network Associates	39.00	5.25	15.6
GMH	57.87	30.37	Network General	37.94	4.69	14.1
NOVL	14.00	6.81	Novell Inc. (H)	13.81	1.13	8.9
ORCL	37.25	17.75	Oracle Corp.	26.69	0.25	0.9
PMTC	36.31	8.50	Parametric Technology Corp.	12.63	2.75	27.8
PSFT	57.43	18.37	Peoplesoft Inc. (L)	19.44	-3.00	-13.4
PIXR	66.00	19.50	Pixar	44.00	7.50	20.5
PLAT	34.31	9.00	Platinum Technology Inc.	12.63	-1.56	-11.0
RATL	19.00	7.06	Rational Software Corp. (H)	18.50	0.75	4.2
SCUR	15.25	6.37	Secure Computing Corp.	11.50	1.31	12.9
SDTI	42.75	5.43	Security Dynamics Tech. Inc.	10.75	0.63	6.2
SE	50.25	20.12	Sterling Commerce Inc.	32.75	4.13	14.4
SSW	32.81	16.25	Sterling Software Inc.	25.31	-4.00	-13.6
SDRC	29.00	7.50	Structural Dynamics Research	14.25	5.81	68.9
SYBS	20.50	4.50	Sybase Inc.	5.97	0.75	14.4
SYMC	32.62	8.68	Symantec Corp.	13.75	3.13	29.4
SNPS	47.12	24.50	Synopsis	38.38	3.06	8.7
SCTC	30.87	8.50	Systems & Computer Technology	12.06	-0.56	-4.5
BAANF	55.50	9.50	The Baan Co. N.V. (L)	11.13	-1.13	-9.2
VNTV	39.75	5.00	The Vantive Corp.	7.50	0.72	10.6
TSAI	44.50	27.06	Trans. Sys. Arch.	35.06	1.06	3.1
VRTS	60.25	23.12	Veritas Software Corp.	42.63	2.00	4.9
WIND	51.62	28.00	Wind River Systems Inc.	39.25	-1.50	-3.7
Telecommunications Carriers						**UP 9.1%**
ATI	65.62	29.12	Airtouch Communications	52.31	2.44	4.9
AT	48.93	33.18	Alltel Corp.	45.06	0.13	0.3
AIT	54.93	30.12	Ameritech Corp.	51.63	1.69	3.4
ANDW	30.06	10.37	Andrew Corp.	15.19	0.81	5.7
T	68.50	43.68	AT&T	63.75	3.25	5.4
BCE	46.62	25.62	BCE, Inc.	30.00	-1.00	-3.2
BEL	53.00	37.37	Bell Atlantic	51.50	1.44	2.9
BLS	82.75	45.25	Bell South	79.94	1.81	2.3
CSN	38.62	20.87	Cincinnati Bell Inc.	23.81	2.19	10.1
CMCSK	51.62	25.87	Comcast (H)	49.13	1.88	4.0
CQ	42.75	20.31	Comsat Corp.	34.69	0.06	0.2
COX	61.50	28.25	Cox Communications Inc. (H)	57.13	3.94	7.4
GSTRF	37.12	8.31	Globalstar Telecom. Ltd.	15.00	4.13	37.9
GTE	64.37	40.50	GTE Corp.	57.88	0.56	1.0
NXTL	34.12	15.37	Nextel Communications	20.06	2.00	11.1
SPOT	66.12	26.50	Panamsat	34.88	4.69	15.5
QCOM	70.37	37.75	Qualcomm	54.56	7.75	16.6
SBC	48.62	30.00	Sbc Communications	43.69	1.44	3.4
FON	80.12	48.75	Sprint Corp.	77.13	2.25	3.0
TCOMA	44.00	19.50	Tele-Communications	43.50	3.88	9.8
TDS	50.12	30.62	Telephone And Data Systems	38.00	3.63	10.5
USW	59.56	36.87	US West	56.25	-0.75	-1.3
VIA	69.37	26.00	Viacom	62.50	1.88	3.1
WCII	48.12	10.25	Winstar Communications Inc.	26.00	10.25	65.1
WCOM	57.87	28.50	Worldcom Inc.	53.44	4.06	8.2
Services						**UP 3.3%**
ACXM	28.25	14.12	Acxiom Corp.	25.69	3.81	17.4
AFA	39.75	21.50	Affiliated Computer Servs	34.19	5.88	20.8
AMSY	34.50	18.37	American Mgt. Systems	27.44	0.94	3.5
AUD	80.43	47.37	Automatic Data Processing	78.94	2.38	3.1
BSYS	45.62	29.25	Bisys Group, Inc.	43.13	3.25	8.2
CATP	58.37	13.37	Cambridge Technology Ptnrs	18.50	1.00	5.7
CEN	64.50	35.25	Ceridian	53.81	-0.38	-0.7
CBR	40.87	13.31	Ciber Inc.	20.19	3.25	19.2
CDO	23.25	12.43	Comdisco	14.25	-0.13	-0.9
CHRZ	53.50	17.25	Computer Horizons Corp.	24.13	3.44	16.6
CSC	74.87	33.62	Computer Sciences	57.13	-0.81	-1.4
DST	70.56	34.00	Dst Systems Inc.	47.69	1.56	3.4
EDS	50.87	29.56	Electronic Data Systems	38.75	2.00	5.4
FDC	36.12	19.68	First Data Group	25.06	2.56	11.4
FISV	49.37	25.43	Fiserv	43.88	0.75	1.7
IT	41.75	17.31	Gartner Group (H)	19.13	-2.44	-11.3
HBOC	38.37	19.31	HBO & Co.	23.88	-5.69	-19.2
KEA	60.93	24.00	Keane	32.31	-1.81	-5.3
NDC	46.00	26.18	National Data	33.63	0.94	2.9
PAYX	52.00	22.43	Paychex, Inc.	46.38	3.00	6.9
PMTS	26.93	11.62	PMT Services	21.38	0.00	0.0
REGI	31.75	8.56	Renaissance Worldwide	11.25	-0.06	-0.6
REY	24.00	12.62	Reynolds & Reynolds	17.63	0.25	1.4
SFE	45.37	17.12	Safegard Scientifics	25.19	5.44	27.5
SAPE	62.00	23.87	Sapient Corp.	39.38	0.50	1.3
SMS	86.50	40.06	Shared Medical Systems	42.13	10.06	-19.3
SDS	40.00	21.68	Sungard Data Systems	30.06	1.06	3.7
SYNT	32.62	8.68	Syntel Inc.	13.75	-3.25	-19.1
TECD	53.12	33.75	Tech Data	45.00	2.50	5.9
TSS	23.93	12.06	Total System Services, Inc	18.50	1.75	10.4
TSAI	44.50	27.06	Transaction Sys. Architects	35.06	1.06	3.1
Network						**UP 8.1%**
COMS	49.81	22.93	3Com Corp.	33.25	1.88	6.0
ADCT	43.62	15.75	ADC Telecommunications Inc.	20.72	0.09	0.5
ANTC	25.00	10.37	Antec	14.00	-1.34	-8.8
ASND	55.06	22.00	Ascend Communications Inc.	45.63	-0.75	-1.6
BNYN	13.37	2.12	Banyan Systems Inc	3.25	-0.06	-1.9
CS	32.12	6.62	Cabletron Systems	10.00	1.00	11.1
CNEBF	21.50	6.50	Call-Net Enterprises	7.63	-2.13	-21.8
CSCO	70.25	30.37	Cisco Systems Inc	59.25	2.13	3.7
ECILF	38.68	19.75	ECI Telecom	28.50	4.06	16.6
FORE	28.00	9.25	Fore Systems Inc	15.69	3.19	25.5
HRS	55.31	27.56	Harris Corp.	33.94	2.94	9.5
GMH	57.87	30.37	Hughes Electronics/GM	37.94	4.69	14.1
ERICY	34.00	15.00	LM Ericsson	22.19	0.38	1.7
LU	108.50	36.18	Lucent Technologies	78.94	6.06	8.3
MADGF	8.25	1.75	Madge Networks	3.59	0.59	19.8
NCDI	13.75	4.37	Network Computing Dev	6.13	0.63	11.4
NWK	20.62	8.00	Network Equipment Tech.	10.88	0.88	8.8
NN	60.37	15.43	Newbridge Networks	19.81	2.19	12.4
NOK.A	92.75	31.62	Nokia Corp.	89.25	10.50	13.3
NT	69.25	26.81	Northern Telecom Ltd.	34.06	-1.25	-3.5
PAIR	30.00	6.00	Pairgain Technologies Inc	8.84	0.88	11.0
PCTL	11.93	4.75	Picturetel	7.41	1.41	23.4
SFA	27.93	11.75	Scientific Atlanta	14.63	0.44	3.1
SHVA	14.37	2.75	Shiva	5.63	1.13	25.0
TLAB	93.12	31.37	Tellabs Inc.	53.81	10.38	23.9
USW	59.56	36.87	US West	56.25	-0.75	-1.3
VRLK	11.18	2.87	Verilink	4.00	0.13	3.2
WSTL	21.75	2.75	Westell Technology Inc.	4.06	0.44	12.1
XYLN	31.31	9.62	Xylan	14.75	1.13	8.3
Semiconductors, Chips & Equipment						**UP 15.4%**
ADPT	52.50	7.87	Adaptec	16.44	5.38	48.6
AMD	31.00	9.31	Advanced Micro Devices	17.56	0.88	5.2
ALTR	52.25	28.25	Altera	41.25	3.63	9.6
ADI	39.62	12.00	Analog Devices	18.81	3.88	25.9
AMAT	42.12	21.56	Applied Materials	33.94	5.19	18.0
ASMLF	49.06	12.93	ASM Lithography Holding	23.88	4.50	23.2
HRS	55.31	27.56	Harris Corp.	33.94	2.94	9.5
INTC	95.62	65.65	Intel Corp.	88.69	4.50	5.3
KLAC	62.87	20.75	Kla Instruments	34.00	7.94	30.5
LLTC	81.37	39.12	Linear Technology	60.38	3.69	6.5
LSI	29.37	10.50	LSI Logic	13.38	2.06	18.2
MXIM	42.00	22.31	Maxim Integrated Products	33.63	4.50	15.5
MU	38.93	20.06	Micron Technology	35.88	3.25	10.0
MOT	70.31	38.37	Motorola	48.44	-0.75	-1.5
NSM	38.43	7.43	National Semiconductor	10.69	1.75	19.6
STM	91.75	35.87	Sgs-Thomson Microelectronics	53.38	6.63	14.2
SLR	59.12	28.87	Solectron Corp. (H)	58.38	6.56	12.7
TER	53.00	15.00	Teradyne	31.25	6.81	27.9
TXN	67.00	39.62	Texas Instrumments	60.88	2.81	4.8
UNPH	65.62	26.25	Uniphase	53.75	6.69	14.2
VTSS	37.18	15.81	Vitesse Semiconductor Corp	30.44	3.13	11.4
XLNX	48.00	28.50	Xilinx	43.13	4.00	10.2
Computer Systems						**UP 11.2%**
AAPL	43.75	12.75	Apple Computer Inc.	36.06	-1.31	-3.5
ASPX	12.37	1.62	Auspex Systems	2.88	1.00	53.3
CPQ	38.68	22.93	Compaq	29.31	2.06	7.6
DGN	26.62	7.00	Data General	11.75	1.19	11.2
DELL	69.25	17.50	Dell Computer Corp.	59.69	2.31	4.0
GTW	68.75	25.06	Gateway 2000 Inc.	52.00	6.25	13.7
HWP	82.37	47.06	Hewlett-Packard Co.	57.50	3.75	7.0
HIT	87.50	40.18	Hitachi Ltd.	52.38	4.88	10.3
IBM	143.68	88.62	IBM (H)	143.13	7.50	5.5
MUEI	20.06	8.43	Micron (H)	19.31	1.19	6.6
MOT	70.31	38.37	Motorola	48.44	-0.75	-1.5
NATI	36.50	17.50	National Instruments Corp.	27.13	4.00	17.3
NCR	38.37	23.50	NCR	30.94	0.44	1.4
NIPNY	61.87	31.00	NEC	39.25	4.63	13.4
PRCM	18.25	3.50	Procom Tech Inc	5.94	1.44	31.9
SQNT	26.50	5.68	Sequent Computer Systems	9.38	2.34	33.3
SGI	17.81	7.37	Silicon Grafix	9.38	0.81	9.5
SNE	97.18	60.25	Sony	74.00	4.00	5.7
SRA	50.87	21.43	Stratus Computer Inc.	35.63	1.00	2.9
SUNW	55.06	30.37	Sun Microsystems (H)	52.56	2.75	5.5
TEXM	6.00	2.00	Texas Micro	2.75	0.19	7.3
TRCD	1.56	0.46	Tricord Systems	0.50	0.03	6.7
UIS	30.68	11.12	Unisys	25.63	1.81	7.6
Internet						**UP 11.7%**
AMZN	147.00	22.00	Amazon.Com	116.75	16.94	17.0
AOL	140.50	32.00	America Online	116.69	13.69	13.3
ATHM	57.25	18.00	Athome Corp.	43.63	-1.94	-4.3
CKFR	31.50	5.75	Checkfree	17.00	7.75	83.8
CHKPF	50.50	10.87	Checkpoint Software	22.50	4.63	25.9
CYCH	27.75	5.87	Cybercash, Inc.	8.16	0.41	5.2
EDFY	22.12	4.62	Edify Corp. (L)	5.50	0.06	1.1
EGRP	37.75	10.00	E-Trade Group Inc.	16.38	1.56	10.5
XCIT	55.50	8.93	Excite, Inc.	33.50	-0.25	-0.7
SEEK	45.00	7.12	Infoseek	25.94	4.38	20.3
LCOS	53.62	9.81	Lycos, Inc.	35.31	5.75	19.5
NSCP	44.50	14.87	Netscape Communications	22.75	2.63	13.0
OMKT	29.12	4.25	Open Market, Inc.	6.31	-0.44	-6.5
OTEXF	23.50	9.00	Open Text Corp.	10.88	-1.75	-13.9
PSIX	21.93	4.25	Psinet	13.63	0.75	5.8
QDEK	2.87	0.25	Quarterdeck Corp.	0.45	0.01	1.1
SDTI	42.75	5.43	Security Dynamics	10.75	0.63	6.2
SPYG	15.37	4.06	Spyglass Inc.	12.63	2.00	18.8
YHOO	134.62	17.12	Yahoo! Inc.	123.25	6.25	5.3
Storage & Peripherals						**UP 12.4%**
ADPT	52.50	7.87	Adaptec Inc.	16.44	5.38	48.6
APCC	39.69	22.12	American Power Conversion	39.69	2.19	5.8
CANNY	27.06	17.00	Canon Inc.	22.00	1.25	6.0
DBD	55.31	19.12	Diebold Inc.	29.06	1.69	6.2
EK	88.93	53.31	Eastman Kodak Co.	75.00	1.06	1.4
EMC	63.50	23.50	EMC	63.00	7.31	13.1
IOM	16.75	2.93	Iomega	4.94	1.19	31.7
LXK	75.50	30.00	Lexmark Int'l Group, Nc	64.63	0.94	1.5
QNTM	40.62	10.81	Quantum	15.81	1.31	9.1
SEG	31.50	16.12	Seagate Technology	23.69	1.50	6.8
STK	51.12	20.12	Storage Technology	29.56	5.38	22.2
TEK	48.18	13.68	Tektronix	18.13	1.69	10.3
XRX	116.50	66.18	Xerox	95.19	-1.31	1.4

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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SEC lowers boom on Y2K data

By Thomas Hoffman

THE SECURITIES and Exchange Commission last week took its first disciplinary actions against 37 brokerage firms for failing to file disclosure reports on their year 2000 projects.

All the firms included in the disciplinary action either failed to file information about steps they're taking to address their systems' year 2000 problem or filed their forms late or incomplete. Under SEC rules, brokerages had a grace period to file their reports by Sept. 21 if they missed an Aug. 31 deadline.

Nineteen of the brokerages cited agreed to pay fines (ranging between $5,000 and $25,000) to the SEC without acknowledging any wrongdoing, the agency said. Cases involving 18 other brokerages are still pending.

The SEC's enforcement actions were part of a coordinated effort with the regulatory arm of the National Association of Securities Dealers Inc. in Washington, which runs the Nasdaq Stock Market Inc.

On its own, the National Association of Securities Dealers Regulation Inc. (NASDR), reprimanded 59 brokerages. Thirty-seven of the 59 firms disciplined by NASDR agreed to fines ranging from $2,300 to $3,200. The other firms cited will either choose to settle or will litigate, according to an NASDR spokeswoman.

Reactions from brokers disciplined by the NASDR were mixed. "We believe we met the requirements [set by the NASDR], but we chose to settle for business reasons, including litigation costs, rather than fight," said J. P. Wilson, compliance director at M. S. Farrell & Co., a New York investment bank, which agreed to pay an undisclosed fine to the NASDR.

"I didn't even know we were on the [NASDR's disciplinary] list," said Jim Schmitt, a principal at Westcountry Financial, a brokerage in Somis, Calif. Schmitt said his company filed its disclosure forms one day after the deadline. But Schmidt said because Westcountry hires another brokerage house to perform its transaction processing work, it has no relation to the year 2000 problem. SEC Enforcement Director Richard H. Walker said the agency will continue to be "vigilant" in policing year 2000 disclosures.

The SEC "will not wait until the new millennium" to take further actions, he added.

The brokerages cited by the SEC and NASDR represented a small percentage of a broad range of publicly traded companies. Approximately 5,600 firms were covered by year 2000 reporting rules, including brokerages that require clients to invest $5,000 or more. A new batch of year 2000 bug status reports is due in April. □

Net management eased

By Cynthia Bournellis

IN A MOVE designed to answer network managers who want a simpler and cheaper way to install and use network management platforms, Cabletron Systems Inc. is repackaging its Spectrum network management software with consulting services.

Last week at the Networld/Interop '98 trade show in Atlanta, Cabletron unveiled three software/consulting bundles that cost $75,000 for any size network. The packages could save customers up to 20%, compared with purchasing the software and services separately, the company said.

Prior to this, users would receive similar services via Cabletron's channel partners at an extra cost. Now, users can get the same help from Cabletron, as well as the channel.

A BIG JOB

The problem with enterprise management systems — including large frameworks such as Unicenter from Computer Associates International Inc., Hewlett-Packard Co.'s OpenView and Tivoli Systems Inc.'s Tivoli Enterprise — is that they are costly and can take more than a year to deploy, according to Gartner Group Inc., a consultancy in Stamford, Conn.

Accordingly, CA and Tivoli have begun to beef up their consulting organizations, too. Spectrum's bundles and services will help customers minimize many of the costs and risks associated with implementing a management platform, such as unmet implementation schedules, said John McConnell, a consultant at McConnell Associates Inc. in Boulder, Colo.

The three bundles include the following:

- The Spectrum Starter Bundle, which gives users a foundation on which to support networking and internetworking devices, can be upgraded via software modules according to users' needs. The package includes a 10-day training period and 10 days of consulting.
- The Optimization Bundle, which provides existing customers with consultants who evaluate current network configurations and recommend enhancements, is the complete Spectrum system.
- The Optimization Plus Bundle, under which Cabletron will outsource Spectrum administration to one of the Big Five consulting firms — who will in turn help deploy the bundle — is targeted at both new and existing customers.

It also includes the entire Spectrum system.

Cabletron also announced a program that guarantees customers its products will outlast those of its competitors. □

Y2K law is loophole

CONTINUED FROM PAGE 1

Los Angeles law firm.

Williams was one of several high-tech lawyers who challenged the legal linguistics of what was then still a bill at a year 2000/euro-conversion conference in Rome two weeks ago. He said Silicon Valley vendors were the "driving force" behind the original year 2000 disclosure legislation that was derailed in the California Assembly in May [CW, May 18] before being picked up by U.S. Rep. David Dreier (R-Calif.) and pushed on a national scale.

Silicon Valley defenders of the Year 2000 Information and Readiness Disclosure Act (S.2392) say that's hogwash.

"The idea that this [bill] was somehow a fix for the high-tech industry is absolutely untrue," said Harris Miller, president of the Information Technology Association of America, an Arlington, Va.-based organization that represents U.S. technology vendors. Miller points to representatives from the financial services, telecommunications and health care industries whom he said worked closely with Congress in crafting the bill.

Several vertical industry groups, including the National Association of Manufacturers and the American Institute of Certified Public Accountants, also have supported the bill because they think the legislation should provide liability protection to companies to freely exchange year 2000 information.

But one large industry group — the Washington-based National Retail Federation — has opposed the legislation because it believes it will make companies complacent about year 2000 preparations as the prospect of litigation is lessened. "We think it's better to leave the liability where it is," said Cathy Hotka, vice president of IT at the organization.

Several corporate IT managers who have looked closely at the fuzzy legal language in the Year 2000 Disclosure Act are worried about how it will affect their legal rights with vendors. For example, the heart of the Good Samaritan Act will "render all [prior] vendor letters and representations about year 2000 statements as meaningless," including statements published on vendor Web sites and verbal promises made to customers, said Deborah Pitts, an attorney at Hancock Rothert & Bunshoft LLP in Los Angeles.

"We're very concerned" about how the act limits the legal liabilities of vendors in the event of system failures, said Mike Skiles, a year 2000 project manager at Eli Lilly & Co. in Indianapolis. "I think what it's going to boil down to is intent: Did you intend to fix the problem or didn't you?" Skiles said. That's hard to prove, legal pundits said.

To get the fine print and key details of the Good Samaritan Act, go to *www.techlawjournal.com*, a Web site for a legal technology journal that follows high-tech legislation.

Skiles recommended continual communication with vendors. "If you don't have a good feel for what [vendors are] doing, go right into contingency planning," he said.

"With business partners, there's no guarantee in [year 2000] certification," said Irene Dec, vice president and year 2000 project director at Prudential Insurance Company of America in Newark, N.J.

Legal maneuvering aside, the best approach in dealing with vendors and other business partners is to review their responses, test their results and go with your gut instincts, Dec said.

"If we put them in a high-risk bucket, we have to decide whether to replace them," she said. Dec added that Prudential has identified nine business partners that it will replace because of year 2000 concerns, "and we're not just talking software, hardware and data feed vendors."

Because the wording of the Good Samaritan Act is very broad, the language is largely interpretive. That could be a silver lining for corporate users, because a judge should have the discretion to determine whether a vendor's year 2000 disclosure statements were made in bad faith or constituted actual fraud, Pitts said.

The problem with that, according to Pitts and other lawyers, is that it's already tough to prove fraud in court — and the Good Samaritan Act won't make it any easier.

One section of the act supports user companies' rights if they can prove "by clear and convincing evidence" that they relied on a vendor's year 2000 statements in plotting their year 2000-readiness strategies before the vendor withdrew support of those statements.

The loosely worded document also throws into question the rights of foreign companies such as Toyota Motor Co. and Barclays PLC, "who are now at the mercy of American high-tech giants," said Malcolm Pumphrey, a London-based IT management consultant for OSI who has done year 2000 project management work for Guardian Royal Exchange PLC in London and the British Post Office.

Wolfgang Dischler, the year 2000 project director at Daimler-Benz AG in Stuttgart, Germany, said both Novell Inc. and Microsoft Corp. have directed him to their Web sites for information about the year 2000 readiness of their products.

"We're Microsoft's biggest European customer. That response just isn't adequate," Dischler said. □

Staff writer Matt Hamblen contributed to this report.

E-mail drama drives attack

CONTINUED FROM PAGE 1

Microsoft CEO Bill Gates as a manipulative liar.

Despite Microsoft's pretrial complaints about "last-minute" and "desperate" attempts by the government to expand its charges, the two-and-a-half-hour opening statement by the government was tightly focused on the browser war.

Exclusionary contracts with would-be Netscape partners and threats to Netscape were part of Microsoft's plan to "crush" the upstart competitor, said David Boies, lead lawyer for the Justice Department.

He said Microsoft's pressure on Intel Corp. and Apple Computer Inc. demonstrated a pattern of anticompetitive behavior — the pinnacle of which was the effort against Netscape.

Boies presented E-mail and memos about a June 21, 1995, meeting at Netscape at which Microsoft allegedly proposed dividing the browser market and buying a piece of Netscape.

In a multimedia presentation, Boies contrasted internal Microsoft documents with Gates' deposition, which was videotaped in August.

On video, Gates said his "only knowledge" of the meeting was from a *Wall Street Journal* article. But in an E-mail to Microsoft officials a few weeks before the meeting, which Boies flashed onto a large monitor, Gates wrote, "I think there is a very powerful deal of some kind we can do with Netscape."

Boies also showed a memo from an America Online Inc. executive that corroborates, albeit thirdhand, Netscape's view of that meeting.

Among the other new evidence revealed last week was a Hewlett-Packard Co. memo to Microsoft complaining about having to take Internet Explorer with Windows. "[I]t is hurting our industry. If we had another choice of another supplier, based on your actions here, we would take it," the document read in part.

"They're trying to demonize Bill Gates," said Robert Lande, an antitrust professor at the University of Baltimore School of Law. "If they can undermine Gates' credibility, you're more likely to believe the Netscape version of the facts."

That's important because regardless of how the judge may rule on other charges, a meeting like that is a separate antitrust offense, said Dana Hayter, an antitrust lawyer at Fenwick & West LLP in Palo Alto, Calif. Even if Microsoft's other behaviors are, in the end, chalked up to being a tough competitor, attempting to divide markets is illegal, Hayter said.

However, during a later cross-examination of Barksdale, John Warden, Microsoft's head lawyer, countered with surprise E-mail from Netscape.

Six months before the meeting, in a secret message sent at 3:01 a.m. on Dec. 29, 1994, Netscape Chairman Jim Clark asked a Microsoft manager to consider buying a piece of Netscape. "Working together could be in your self-interest as well as ours," Clark wrote.

The note is "crucial" to explaining Microsoft's talks with Netscape in June 1995, a Microsoft spokesman later said.

To further undermine Netscape's contention that Microsoft had been hostile, Warden displayed a Netscape employee's own notes from a different Microsoft meeting that he characterized as "very friendly, nonthreatening."

Warden also engaged Barksdale in a verbal duel about Netscape's health, dragging from Barksdale confirmation that the company is in no financial danger and has seen sales growth every year since its April 1994 founding.

After a break in the trial Friday, Barksdale's cross-examination is scheduled to continue today. After that, David Colburn, a senior vice president at America Online, is slated to testify. □

Two-pronged attack

Microsoft lawyer John Warden's lengthy questioning of Netscape CEO Jim Barksdale served two purposes, legal experts said.

A methodical dissection of nearly every paragraph in Barksdale's 127-page pretrial deposition was, of course, intended to defend Microsoft. Warden wants to clobber Barksdale whenever his in-court words stray from his deposition, to agitate him and make it look like he's lying.

But the minute level of detail Warden introduced into the record will help an appeals court later. "An appeal is based on review of the evidence and factual record and whether the initial judge had enough facts to make his ruling," said Brendan Hare, a lawyer at Hare & Chaffin in Boston. "You can't add more facts later, usually." — Kim S. Nash

U.S. VS. MICROSOFT SIDELIGHTS

- **Sometimes it doesn't pay to ask.** In his questioning of Netscape CEO Jim Barksdale, Microsoft lawyer John Warden wanted to know what Netscape's sales will be this quarter. Barksdale said Wall Street was briefed, but he was reluctant to share "forward-looking" financial information. After a long discussion at the bench with the lawyers, Judge Thomas Penfield Jackson told Barksdale he must answer. "Since I don't participate in giving that guidance, I don't know," Barksdale said, to loud laughter in the courtroom. Netscape's CFO handles analyst briefings, Barksdale said.
- **Press releases aren't enough.** Some lobbying groups attending the trial are giving out buttons. One pro-Microsoft slogan: "Klein & Barksdale did brunch . . . And now consumers are getting stuck with the tab." It refers to a meeting of Joel Klein, assistant U.S. attorney general, and another lawyer at Barksdale's home in Palo Alto, Calif. Barksdale said in court he offered his visitors breakfast and they accepted.
- **Strict rules for crowd control.** There are seats for 100 spectators, but many more people tried to get in, said Bob West, Jackson's court clerk. But West doubts interest will last. "The first day is jam-packed, but then it starts to dwindle," he said. "People realize that it's just boring testimony."
- **An appealing thought.** Most legal experts agree that whoever loses this case will appeal — and then that loser will appeal that decision to the U.S. Supreme Court. "This is antitrust's 15 minutes of fame," said Robert Lande, a law professor at the University of Baltimore School of Law in Maryland.

SUN MICROSYSTEMS VS. MICROSOFT

- The judge in Sun Microsystems Inc.'s Java contract suit against Microsoft unsealed several documents submitted by both sides. The material was previously marked "confidential" by the vendors. Among the newly revealed items: A Microsoft memo tells of trying "to kill cross-platform Java by growing the polluted Java market." Meanwhile, a Sun manager seemingly admitted that Sun simply got beat when it signed its Java deal with Microsoft, writing in an E-mail: "Microsoft was smarter than us when we did the contract." Judge Ronald Whyte still hasn't ruled on Sun's motion for a preliminary injunction against Microsoft shipping its modified version of Java.

MOREONLINE

For links to an archive of *Computerworld* coverage of Microsoft, visit *Computerworld* online.
www.computerworld.com/more

WHERE WERE YOU ON JUNE 21, 1995?

Quotes from the first week of the Microsoft trial:

"The evidence will show that Netscape's account of that meeting — uncritically accepted by the government — is fantastical."

– Microsoft lead attorney John Warden, on the June 21, 1995, meeting at which the government alleges Microsoft proposed to Netscape dividing the browser market

"I have never been in a meeting in my 33-year business career in which a competitor had so blatantly implied that we should either stop competing with it or the competitor would kill us. In all my years in business, I have never heard nor experienced such an explicit proposal to divide markets."

– Netscape CEO James Barksdale, in his deposition, on the June 21 meeting

"I'm not aware of any such thing; it's very much against the way we operate."

– Microsoft CEO Bill Gates, in his videotaped deposition, on the market division allegation

"I decided to give it away free because Bill Gates had told me he was going to give it away free, before we released our first beta. ... I felt like we would have to in order to survive against Microsoft."

Q: "When did Mr. Gates tell you that?"

A: "At a conference in Washington, D.C. ... beginning of October of 1994, end of September ... called the Network Economy Conference. He told me ... the whole group, the whole audience, that he intended to do that."

– Netscape Chairman Jim Clark, in his deposition, on why he started giving away the Navigator browser for free

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The Back Page

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Dispatches & images from the fringes of the electronic frontier

LABRADOR FETCHES WEB INFO

Labrador Software Inc. (*www.godog.com*) put its E-Retriever intranet search engine to the test at Internet World. A race to see who was fastest at finding intranet info featured an MIT grad, a local 8-year-old and Jerry, an Internet-savvy Labrador retriever. The youngster, using Labrador's "get engine," won the race, beating the MIT grad. The dog took third place.

News to ponder

Should you take your start-up public? Is Windows 98 for you? Get tongue-in-cheek answers at the Silicon Valley Tarot Cards Web site (*www.sjgames.com/svtarot/*). The cards feature hackers, venture capitalists, consultants, cubicle dwellers and CIOs.

Gemplus Associates, a leading smart-card maker (*www.gemplus.com*), says it will develop a biodegradable "corn card" as an alternative to plastic cards. The cards will be made from a corn-based resin, called Mazin, developed at the University of Nebraska.

Kevin Warwick, a professor of cybernetics at the University of Reading in the U.K., recently had a silicon chip transponder implanted in his arm for several days to demonstrate the future of human/computer interaction. He programmed his office computers to say, "Hello, Professor Warwick," whenever he walked into the room.

The Best of Online Travel (BOOT) Awards

- **Best airline Web site:** American Airlines *(www.aa.com)*
- **Best hotel Web site:** Hilton Hotels Corp. *(www.hilton.com)*
- **Best car-rental Web site:** The Hertz Corp. *(www.hertz.com)*
- **Most tech-friendly airport:** Dallas-Fort Worth International
- **Best travel gadget:** 3Com PalmPilot III (at left)
- **Best online visitor's center:** New York City *(www.nycvisit.com)*

Source: Online poll at TheTrip.Com (*www.thetrip.com*)

THE FIFTH WAVE *by Rich Tennant*

E-Mail Rich Tennant at the5wave@tiac.net

"We've failed to meet our Oct.31 launch date for Treat this year, but we're developing a new, more robust version that should be available by the first or second quarter of next year."

Inside Lines

Because it's *warm* there, that's why

Contrary to an Inside Lines item two weeks ago, the worldwide financial crisis has *not* wiped out the Oracle Application Users Group (OAUG) meeting this week in Hawaii. In that item, we reported that "officials are now warning that attendance at the conference, which starts Oct. 25, will be relatively light." To clarify: It was an Oracle official, not OAUG officials, who told us attendance would be down. We regret the confusion. Mostly, though, we regret we aren't among the 5,000 OAUG attendees in Honolulu.

First things first for Microsoft judge

The first order of business last Thursday at the Microsoft antitrust trial in Washington didn't exactly deal with computers or software. U.S. District Judge Thomas Penfield Jackson said he wanted to "extend congratulations" to the new World Series champs, the New York Yankees. Jackson said he's a fan of the former Washington Senators (they became the Texas Rangers in 1972) and — apparently concerned about another monopoly in the making — added, "The Yankees ought to be the defendant here."

Tick . . . tick . . . tick . . .

IT people may already be sick of hearing about the year 2000 problem, but the rest of the world (think of it as the "nontechnology sector") is just getting geared up for it. In Paris, the Eiffel Tower now displays a huge sign that reads "J 432 avant 2000" — in English, "432 days before 2000." The sign, visible for miles, weighs 50 tons, contains 1,342 lights and is updated daily. And year 2000 guru Ed Yourdon has gone mainstream with his Year 2000 Home Preparation Web site at *www.readyfory2k.com*. The site is an online guide designed to help homeowners and other consumers plan for possible disruptions in food, electricity, water and other essential services.

But who's counting?

Remember that study early this year, sponsored by the Information Technology Association of America, that claimed that there were 346,000 open IT jobs in the U.S.? Experts have been debating the extent of the labor shortage ever since. But Microsoft recently conducted its own survey, asking 408 channel partners and customers how many open jobs they expected to have in the next year related only to Microsoft software. The number they came up with: a whopping 647,000 jobs in the U.S. alone.

Rumor mill

American Express is jumping into the ATM fray — but not the networking crunch-bunch. The New York-based financial services giant is said to be close to acquiring 2,500 automated teller machines from EDS. . . . Networking kingpin Cisco Systems this week should unveil a new router that supports virtual private networks (VPN), which serve as secure data tunnels across the Internet. . . . Compatible Systems in Boulder, Colo., next month will take the wraps off its own VPN access server for large corporate networks. The IntraPort Enterprise 8 will support up to 7,000 connections and 224 LAN-to-LAN tunnels. . . . Expect workflow vendor Keyfile in Nashua, N.H., to announce that it's buying F3 Software, an electronic forms vendor in Burlington, Mass. F3's technology should help Keyfile customers replicate paper-based tasks over the Internet.

It's an ill macroeconomic wind that blows no good. One San Francisco-area financial services CIO says he's cautiously happy to see tech stocks taking a beating. Why? That should make it harder for hot start-ups in Silicon Valley to lure away IT employees with stock options. He says he also hopes that a slightly cooler economy will put a dent in the sky-high salaries and sign-on bonuses recruits are demanding and that falling currencies in Asia and Russia will make it easier to find good technical help cheap overseas. News editor Patricia Keefe is hoping she'll find some good help, too, in the form of your news tips and tidbits. E-mail her at patricia_keefe@cw.com or call (508) 820-8183.

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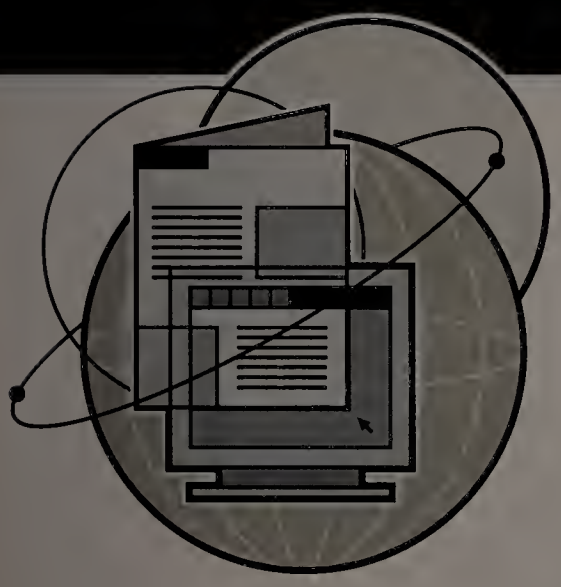

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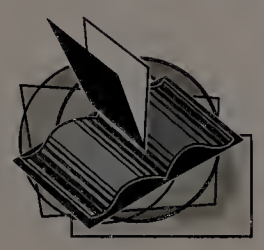

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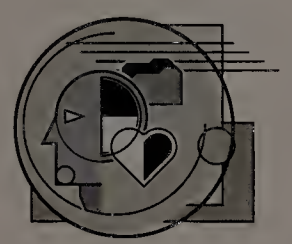

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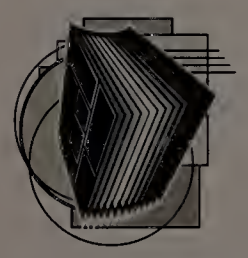

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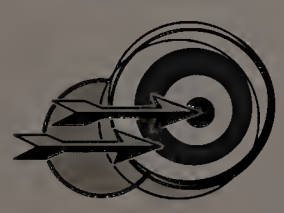

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Editorial Calendar

ISSUE DATE	AD CLOSE	EDITORIAL FEATURES
November 9	October 30	**QuickStudy** Kernel Technology
November 16	November 6	**Review Center** Annual Customer Satisfaction Survey on PCs and Notebooks. **Annual Skills Survey** **QuickStudy** DMI (Desktop Management Interface)
November 23	November 13	**QuickStudy** XML
November 30	November 20	**Review Center** Cool Stuff: Reviews of the latest innovative gadgets and products to help you do your job. **QuickStudy** OLAP
December 7	November 25*	**QuickStudy** Merced
December 14	December 4	**Review Center** Server Operating System: NT vs. Unix vs. Netware. **QuickStudy** ISDN (Integrated Services Digital Network)
December 21	December 11	**QuickStudy** Clustering technology
December 28 January 4	December 18	**Annual Forecast Issue** An examination of the technologies and issues that will impact corporate IT in 1999. **Annual Hiring Outlook** A survey that tracks which regions, industries and technologies will present IT job opportunities in 1999.

Trade Show Distribution
November 16 Issue Comdex Fall, Las Vegas, 11/16–11/20

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